

CHAPTER ONE: INTRODUCTION

1.1 Background

On Tuesday 7 December 2010, the Australian Council for Educational Research (ACER) published a media release:

For release 21:00 AEDT Tuesday 7th December 2010

PISA identifies challenges for Australian education

The reading literacy of Australian 15-year-old students has fallen sharply over the past decade results from the 2009 administration of the OECD Programme for International Student Assessment (PISA) reveal.

...

Australia's overall performance declined by 13 score points from 2000 to 2009. The decline is primarily among higher achieving students and is more evident in some states than others.

'Australia was the only high performing country to show a significant decline in reading literacy performance between PISA 2000 and PISA 2009,' Professor Masters said.

It would come as no surprise if this potentially volatile 2010 report, which highlighted the continued downward trend in reading performance among Australian students, ignited outrage and concern in the community and stimulated extended debate among educators across this country. However, this was not the case.

The first indication that Australia's reading results had slipped in the world rankings was reported in December 2007, when the PISA 2006 results announced that the reading performance of Australian students had declined from previous years. The ACER 'Executive summary' on Australia's performance in PISA 2006 stated:

The results from the first three cycles of PISA indicate that the performance levels of Australian students, while comparing reasonably well internationally, are generally not improving. ... There had also been no evidence previously of any decline in performance, but the PISA 2006 results now point to a significant decrease in performance in reading literacy since PISA 2000. While some caution should be exercised in interpreting these

results, as PISA 2006 is comparing the results from the assessment of a minor domain to the assessment of a major domain, there is evidence of a decline, and it seems to be occurring primarily at the upper end of the achievement scale without any compensatory improvement at the lower end. The decline was found for both male and female students. ('Executive Summary' Retrieved from www.ieu.org.au/pisa.pdf)

This 2006 report sparked extensive media commentary, as summarised by ACER in their report 'PISA: Australian media coverage, December 2007':

PISA: AUSTRALIAN MEDIA COVERAGE, December 2007

- A front-page article in *The Australian* noted that a drop in performance by Australian students was due to a fall in mean scores achieved by our top students. ('**Our brightest students falling behind the world**', by Justine Ferrari, *The Australian*, 5 December 2007, page 1).
...
- *The Age's* coverage noted that Australian students were slipping behind other countries and quoted Geoff Masters, Julia Gillard and Bronwyn Pike on their reactions to the results. ('**Australian students fall behind**', by Bridie Smith, *The Age*, 5 December 2007, page 1).
...
- *The Sydney Morning Herald's* coverage focused on the decline in reading scores and suggested it could be due in part to students not reading as much as they used to. ('**Australia slides down reading list**', by Anna Patty, *The Sydney Morning Herald*, 5 December 2007, page 1).
...
- *The Financial Review* concentrated on falling literacy standards. ('**Literacy standards decline**', by Alexander Symonds, *The Australian Financial Review*, 5 December 2007, page 3).
...
- An article in the *Townsville Bulletin* noted that Australia had done well on the science assessments but not so well on reading. ('**Good at science, bad at reading**', *The Townsville Bulletin*, 5 December 2007, page 3).

Figure 1.1. ACER (2007). PISA: Australian media coverage, December 2007. Retrieved from http://www.acer.edu.au/documents/eNews_PISANews.pdf

Yet, while the more recent 2010 report examining the PISA 2009 results in many ways replicated the PISA 2006 results with regard to Australia's declining reading performance, in contrast to the media hype generated in 2007 (Figure 1.1), only lacklustre media coverage followed the release of the 2009 PISA results. With the exception of a report in *The Australian*

with the headline ‘A number of Australian kids are failing to reach their full potential’ (Patty, 2007), there was little other media coverage. Why, then, would the continuing downward trend three years later fail to ignite the same level of interest in the community and, more importantly, why was this decline in reading performance occurring?

A possible explanation for the lack of community interest might be linked to how Professor Geoff Masters (2010), chief executive officer of ACER, reported the decline: ‘Australia’s ranking in reading has gone down from 2003 and 2006 because there are fewer Australian students who can read at a high level, which is lowering the average.’ This statement clearly aligned the issue with falling achievement levels among Australia’s talented readers. The lack of community interest may be a reflection of what Gagné terms a ‘spectre of elitism’ (2011, p. 2) that appears to transcend cultures and borders in today’s world. Put simply, ‘spectre of elitism’ is a version of the Australian colloquialism ‘tall poppy syndrome’, in which the learning needs and achievement of more able students are not deemed as important as or commensurate with those of more typical and less able students. While this assumption is speculative, it is mirrored by the current lack of research and empirical data about what is known about talented readers in schools, and will be discussed in detail in this thesis.

The decline in reading performance among our most able readers was in part a catalyst for this research as it reflected the personal experiences and concerns of this researcher. As a secondary English teacher and former primary Opportunity Class ‘C’ (OC) teacher, I had for some years noted with rising concern a trend of disconnection from reading in some former students who had been identified as talented readers in their younger years, as they progressed through the English syllabus in secondary school. After the release of the PISA 2006 results, I wanted to discover if other former students had experienced similar disconnections from their reading and English coursework as they moved from primary to secondary school and beyond.

In 2007, I emailed a brief questionnaire to a number of former students, who were studying at the tertiary level at that time, to determine if their memories and perceptions of reading at

school mirrored the PISA findings in any way. Following are some of the questions and answers received. The responders chose their own pseudonyms.

At what stage or class did you stop being taught reading skills by your teachers?

Explain in as much detail as possible.

In primary school, beyond about year four, no further skills were learnt as the focus was largely on literacy which students had achieved by this stage. (Nic, 19 years old [currently studying advanced mathematics at the University of New South Wales])

Reading has to be something you want to do, not something you have to do. The few times I've enjoyed reading at school was because I was able to escape without any distraction. (Jed, 17 years old [currently studying information technology at UTS])

Do you think your reading skills continued to develop over the years in a steady upward progression, or was there a ‘plateauing effect’ at certain points?

I believe my reading skill plateaued in late primary school, as I was largely unaware or uninterested any more in active reading.(Nic)

My reading ability [did not] just reach a plateau but declined. (Gail, 20 years old [currently studying medicine at Newcastle University])

I noticed a plateau in both myself and others. During primary school I was always confident in my ability to read with greater fluency than the majority of my peers. I began to describe myself as an average reader in Year 8. (Z, 25 years old [currently completing a PhD in anthropology at Sydney University])

If you could give any advice to teachers of reading today, what would it be?

Focus on active reading at a younger age, encourage an enthusiasm for reading complex texts (for example by actively suggesting texts suited to a student's interests), and encourage analysis beyond the conventionally accepted interpretations.(Nic)

Start early and always challenge the pupil. (Frank, 19 years old [currently studying psychology at Sydney University])

More confident readers will become bored if they are given books that are too easy or are left to read by themselves while everyone else is assisted and is able to engage with the teacher. It is very easy for skilled readers to lose interest and motivation.(Z)

These statements appear to support the PISA 2006 results and were powerful motivators for this study as they suggested a clear pattern of disconnection was occurring in the reading habits of some young talented readers.

In 2007 I documented students whom I had known to be enthusiastic and talented readers in their primary school years and who had since transmuted into disengaged and at times resentful students of English in their senior secondary school years. Discussions with these students identified many generally negative attitudes towards reading, while others indicated their discontent lay with the contractual reading obligations of the secondary English curriculum. Most disturbing for me was the realisation that many of these students were not just failing to meet their potential but also that their disconnection from English studies could put their career aspirations beyond reach.

Reis (2008) has stated that ‘talented readers need appropriately challenging instruction and curricular content’ (p. 655). Could it be that the secondary English curriculum is not providing the appropriate challenges required by these students? Reis et al. (1995, as cited in Reis, 2008) found that underachieving readers in secondary school ‘consistently acknowledged that the easy curriculum they encountered in elementary and middle school failed to prepare them for the rigors of challenging classes in high school’ (p. 659). Or might the problem lie in the earlier years? Reis and Boeve (2007, as cited in Reis, 2008) identified that ‘the reading levels of these students [talented readers] may decline by the time they reach upper elementary as a result of an absence of challenge in reading in school’ (p. 657).

Research by Reis, Gubbins, Briggs, Schreiber et al. (2004) first identified disconnection from reading and a plateauing of reading skills among young talented readers. Their 2004 study also included a synthesis of the existing literature on talented readers, finding that most of what is

currently known about this population is based on anecdotal evidence. As Reis (2008, p. 656) noted:

Identifying the characteristics of and defining talented readers is challenging because no consensus exists in the research or anecdotal case studies literature. ... Characteristics of talented readers have been described anecdotally, but little empirical research has focused on this population.

1.2Significance of the Study

The PISA results over the last decade support that concerns for talented readers are clearly warranted; yet, to date, the lack of research in this area makes addressing this issue challenging. The 2004 study by Reis et al. stated that without intervention and appropriate teaching and learning experiences, talented readers are ‘at risk in many schools’ (2008, p. 664), as these students’ reading skills can plateau, be delayed or be stopped altogether because they ‘never learn to exert effort in reading and consequently acquire poor work habits’ (p. 664). In addition to this issue, it is also unclear if talented readers should be included within gifted pedagogy. While anecdotal lists of characteristics claim to identify the features that separate talented readers from typical readers, a popular core of writing by Jackson (1998) and Durkin (1990), stridently argues that the ability to read and comprehend early in life should not be considered an indicator of giftedness. These dated articles are still acknowledged and supported by modern researchers such as Reis (2004, 2008)and indicate current investigation into this stance is warranted. This present study re-examines this issue in light of the data collected and the current context of gifted education.

With the intent of adding to the limited research that exists on young talented readers, the current study approaches this task with a dual focus: first, to determine if a relationship exists between critical literacy and metacognition, and second to compare talented and typical readers through the lens of metacognitive and self-regulatory abilities. To this end, this present study draws together the fields of metacognition, reading, critical literacy and gifted education.

The research on metacognition and reading has been substantial since Brown's (1978) early work with Flavell in the late 1970s. Stemming from Brown's work was the long-held belief that 'metacognition is considered to be a late-developing skill' (Griffith & Ruan, 2005, p. 8). The research of Flavell (1979), Paris and Myers (as cited in Paris & Winograd, 1990), Pintrich and Zuscho (2002) and Brown (1985) states that only older high school and college students have the ability to regulate and monitor their cognition to accomplish tasks and are 'more sensitive to find[ing] gradations of importance in text' (Griffith & Ruan, 2005, p. 8). Baker (2005) writes that children who possess better reading abilities appear to have better metacognitive knowledge and suggests this can be attributed to experience: 'Children who read frequently tend to be better readers, but a link between reading frequency and metacognition has not been empirically established' (p. 65). This study aims to identify a connection between advanced reading ability and metacognition and proposes that reading frequency may not be the key that Baker proposes.

Part of the problem in attempting to identify metacognition in young children has been the reliance on 'adult experimental paradigms adapted for children' (Waters & Kunnmann, 2010, p. 3). Therefore, the current study addresses the discussion concerning appropriate instrumentation for identifying metacognition in younger students (Baker, 2005; Whitebread et al., 2008). Popular adult experimental paradigms, such as self-report surveys, continue to be recommended and used in literacy and metacognitive research studies (Baker, 2005; Carr & Taasoobshirazi, 2008; Helms-Lorenz & Jacobse, 2008; Israel, 2007). These include Mokhtari and Reichard's (2002) Metacognitive Awareness Reading Strategies Inventory (MARSI) and Schmitt's (1990; 2005) Metacomprehension Strategy Index (MSI). The current study compares data collected from the MARSI and MSI with those gained using an observation-based instrument grounded in Whitebread et al.'s (2007; 2009) Children's Independent Learning Development (C.Ind.Le) tool, which was originally designed specifically for identifying metacognition and self-regulation in the play tasks of very young children.

While research has made significant contributions to our understanding of the importance of metacognition in the reading process, no research has been conducted into the role it may play in critical literacy. Griffith and Ruan made the most recent allusion to this in 2005:

Although no existing literature specifically points out the connections between metacognition and critical literacy, the two are closely related to each other. Readers with critical literacy knowledge and skills are most likely to employ metacognitive strategies for text understanding and critiquing. Metacognitive research can generate important implications concerning how we support readers in developing critical literacy. (pp. 11–12)

Critical literacy moves beyond traditional notions of deconstructing meaning in reading, requiring readers to move beyond literal understandings and to comprehend texts at a deeper, analytical level (Luke & Freebody, 1999; McLaughlin & DeVoogd 2004; Pearson, 2001). It is a dynamic pedagogy that encourages questioning and thinking skills to expose power ideologies and textual bias. Importantly, it is an integral element of the current Australian Curriculum English syllabus for students from Kindergarten to Year 12. If strong links can be found between metacognition and critical literacy, this may provide classroom teachers with a familiar pedagogical structure that can offer appropriate challenge and skill-building opportunities for young talented readers.

In addition, the study aims to compare talented and typical readers in terms of their ability to interact with critical literacy tasks and the metacognitive and self-regulatory behaviours of both groups of readers. It is envisaged that the findings that emerge from the study may offer evidence that talented readers should be included in gifted pedagogy in response to those who believe that the ability to read at an advanced level at a young age should not be considered an indicator of giftedness (Durkin, 1990; Jackson, 1998). It is hoped that these assumptions will be shown to be based on outdated understandings of the reading process and that the failure to

continue to read at an advanced level in later years might be contributed to environmental and developmental processes rather than natural abilities.

1.3 Purpose of the Study

The purpose of this study is to explore the nature of the relationship between the critical literacy skills of young readers and the metacognitive behaviours observed as they respond to critical literacy questions. In doing so the study aims to collect data that focus on the relationship between critical literacy and metacognition. It is envisaged that the findings from the study will contribute to current views about the effectiveness of observational tools in identifying metacognitive behaviours in young children and how talented and typical readers employ metacognition differently in their reading practices. It is anticipated that this study will offer empirical evidence that both supports some of the anecdotal writings identifying the characteristics of talented readers and the inclusion of young talented readers within gifted pedagogy.

The purpose of this study is reflected in the following four research questions:

1. If metacognition is an aspect of critical literacy discourse, what metacognitive strategies are required for the successful analysis, understanding and critiquing of texts?
2. How adapt are young talented readers at employing metacognition than their age peers, when performing critical literacy discourse?
3. What metacognitive strategies are employed by talented readers compared to typical readers when answering critical literacy questions?
4. How do talented readers differ from their typical peers?

1.4 Research Design

This study will adopt a qualitative research design, undertaking a descriptive approach to identify patterns in the data (Babbie, 2007). Several data-collection methods will be employed, including a parent questionnaire, two metacognitive surveys (Marsi and MSI), the Elementary

Reading Attitude Survey (ERAS), filming of sessions with participants for the purpose of transcribing responses and observing behaviours, and a discourse analysis frame for identifying and co-coding metacognitive behaviours (DAF). Twenty-nine participants, aged 7 to 12 years old, from two independent schools accepted the invitation to participate in this study. The group will comprise both talented and typical readers, as identified by their school principals and teachers (detailed in section 3.4.3). Due to the expected volume and richness of data to be collected, a multiple case-study approach will be employed, as the generalisations that can be drawn from this method offer the opportunity for intense analysis that can yield advanced understandings and new insights (Flyvbjerg, 2010). Eleven participants across the three learning Stages, including both talented and typical readers, will be selected for a multiple case-study methodology. These findings will inform the major conclusions of the present study.

1.5 Structure of the Thesis

This is a thesis of nine chapters and a brief summary of each chapter follows.

This introductory chapter has situated the study within the context of current educational issues concerning young talented readers. It provided a rationale for the research, the significance and purpose of the study and an overview of the research design. Chapter Two reviews the literature of the three major research fields incorporated in this study. The chapter is divided into three sections. The first investigates specific issues related to talented readers, including current definitions and characteristics, and Australian pedagogical understandings of the reading process. The second section looks at critical literacy, definitions, historical underpinnings and Australian pedagogical practices and issues. The final section of the review explores the definitions, historical and research movements and issues, and pedagogical implications of metacognition in young children. Chapter Three presents the design of the study, the pilot study and its implications for the main study, and outlines the data analysis procedures undertaken. Chapter Four presents the discourse analysis procedures of the critical literacy responses across the different text types and provides a preliminary discussion of the findings. Chapters Five to Seven

provide an in-depth analysis of the multiple case studies selected for analysis across Stages 1 to 3. Chapter Eight discusses the results, highlighting issues revealed by this study, including the identification of talented readers, the critical literacy and metacognition results, and the language patterns of talented and typical readers. Chapter Nine discusses each of the research questions in depth and presents the themes that emerged from this present study. Finally, Chapter Ten summarises the present study, highlights the major findings and their implications for teaching practice, and presents the limitations of this current study and considerations for future research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Enabling a study to focus on young talented readers and their metacognitive practices during critical literacy requires exploration of four major research areas: gifted and talented education, reading, critical literacy and metacognition. As stated in Chapter One, little research has been conducted into either the identification and learning needs of talented readers or identifying how metacognition enables critical literacy discourse. Conversely, the individual research fields of gifted and talented education, reading pedagogy, critical literacy and metacognition have a rich history of research that currently informs teaching practice across the globe. For the purpose of the current study, this literature review will narrow the focus of gifted and talented education and reading pedagogy to those issues that impact talented readers. The sections exploring literature on metacognition and critical literacy will focus on definitions, historical underpinnings and pedagogical links that will directly inform the foci of the present study. Hence, Chapter Two is divided into three sections: the first section will focus on reading and gifted and talented research literature that will highlight current understandings about talented readers; the second section will discuss the historical evolution of critical literacy and focus on Australian critical literacy; and the final section will explore the ‘fuzzy and complex’ field of metacognition, and recent trends that attempt to bring order and clarity to this diverse research field.

2.2 Talented Readers

... She discovered I was literate and looked at me with more than faint distaste. Miss Caroline told me to tell my father not to teach me anymore, it would interfere with my reading.

“Teach me”? I said in surprise. “He hasn’t taught me anything, Miss Caroline. Atticus ain’t got time to teach me anything”, I added, when Miss Caroline smiled and shook her head. “Why he’s so tired at night he just sits in the living room and reads.”

Harper Lee, *To Kill A Mockingbird*, 1960

2.2.1 Introduction

Due to the lack of empirical research that exists on talented readers this section of the literature review will take a tri-level approach. First, it will investigate the literature on talented readers; then it will review relevant issues in reading theory; and finally discuss how these concepts currently sit within gifted education.

2.2.2 How is the Talented Reader Defined?

While a logical question to ask at the start of such a study, it is surprisingly difficult to answer because ‘... defining talented readers is challenging (as) no consensus exists in the research’ (Reis, 2008, p. 656). This section will look at past attempts to define this population, the issues behind the lack of consistency, and draw on theoretical underpinnings to offer a possible solution to this dilemma.

In 2004 Reis, Gubbins, Briggs, Schreiber, Richards, Jacobs, et al. undertook a study that observed twelve third and seventh grade classrooms over a nine-month period to determine if ‘talented readers received differentiated reading curriculum and/or instructional strategies’ (2004, p. 315). The study also looked at the existing literature on talented readers and found that it was ‘primarily anecdotal’ (Reis, 2008, p. 657), and ‘no consensus exists on how to define this population which makes research more challenging’ (2004, p. 316).

2.2.2.1 Qualitative identifiers

Despite most of the current literature on talented readers being anecdotally based, the identifying characteristics proffered by authors writing about this population are quite similar.

For example, talented readers are said to begin reading early and sometimes self-taught (Catron & Wingenbach, 1986; Halsted, 1990; Kaplan, 1999; Moore, 2005; Vacca, Vacca & Grove, 1991; Weber, 2010), may have developed superior thinking skills (Catron & Wingenbach, 1986; Clarke, 1997, Feldhusen, 1989; Fogarty, 2009; Sternberg & Davidson, 2005), are enthusiastic readers using more effective reading strategies than their same-aged peers (Clark, 1997; Collins & Aiex, 1995; Halsted, 1990; Kaplan, 1999) and have advanced literacy and comprehension skills (Bond & Bond, 1983; Dooley, 1993; Fogarty, 2009; Schnur & Lowrey, 1986; Vosslamber, 2002; Wood, 2008).

Reis et al. (2004) found similar trends in the literature and from this created a list of characteristics shared by talented readers (see Figure 2.1). This list is divided into four major categories: enjoyment in the reading process; read early and above level; advanced processing and advanced language skills.

Characteristics of Talented Readers

Enjoyment in the reading process:	Read avidly and with enjoyment Use reading differently for different reading purposes Demonstrate thirst for insight and knowledge satisfied through reading Pursue varied interests in and curiosity about texts View books and reading as a way to explore the richness of life Seek and enjoy depth and complexity in reading Develop a deeper understanding of particular topics through reading Demonstrate preferences for non-fiction Pursue interest-based reading opportunities
Read early and above level:	Read at least two grade levels above chronological grade placement Begin reading early and may be self-taught
Advanced processing:	Retain a large quantity of information for retrieval Automatically integrate prior knowledge and experience in reading Utilize higher-order thinking skills such as analysis and synthesis Process information and thoughts at an accelerated pace Synthesize ideas in a comprehensive way Perceive unusual relationships and integrate ideas Grasp complex ideas and nuances
Advanced language skills:	Enjoy the subtleties and complexities of language Demonstrate advanced understanding of language Use expansive vocabulary Use reading to acquire a large repertoire of language skills Use language for humor Display verbal ability in self-expression Use colorful and descriptive phrasing Demonstrate ease in use of language

Note. Material for this table came from Anderson, Higgins, & Wurster, 1985; Baskin & Harris, 1980; Catron & Wingenbach, 1986; Dean, 1998; Dooley, 1993; Durkin, 1966; Halsted, 1994; Jackson, 1988; Kaplan, 1999; Renzulli & Reis, 1989; Savage, 1983; Southern & Jones, 1992; Stanley, 1989; Trezise, 1978; Vacca, Vacca, & Gove, 1991; VanTassel-Baska, 1996.

Figure 2.1. Reis et al. (2004) collated characteristic traits of talented readers.

2.2.2.2 Quantitative identifiers:

Almost thirty years ago Dole and Adams' (1983) provided a definition for talented readers still favoured by a number of authors (Catron & Wingerbach, 1986; Fogarty, 2009; Reis, 2008; Wood, 2008). The definition provides a measurable indicator that considers both performance and potential beyond a reliance on characteristic traits.

Reading approximately two or more years above grade level as measured by a standardised reading test, or children who may not have achieved two or more years above grade level on a standardised reading test, but who have been identified as intellectually gifted with potential for high reading performance. (p. 66)

This statement is problematic within the Australian context as it relies on standardised tests that quantify reading achievement on year or grade-based criteria. Locally, standardised reading assessments like TORCH (Tests of Reading Comprehension) and PAT-R Fourth Edition (Progressive Achievement Tests in Reading) use normative data based on Australian students and achievement is reported using the language of stanines and percentages. Therefore, the Dole and Adam's definition is not altogether practical in Australian classrooms.

2.2.2.3 Gifted, talented or precocious?

The literature on labelling highly able readers reflects the similar lack of consistency found in gifted education. An author's use of the terminology 'gifted' or 'talented' generally reflects their own preferred theoretical model of gifted pedagogy. In the literature discussing highly able readers, four labels appear to be in common use. The most popular term used by the largest group of authors refers to this group as 'gifted readers' (Bonds & Bonds, 1983; Catron & Wingenbach, 2001; Collins & Aiex, 1995; Dole & Adams, 1983; Dooley, 1993; Halsted, 1990; Kaplan, 1999; Levande, 1999; Polette, 2009; Smutny, 2000). A smaller group of eminent gifted researchers prefer to label these children as 'talented readers' (Reis, 2004, 2008; VanTassel-Baska, 1996). A third group choose to use the label 'gifted *and* talented readers' (Kingore, 2011; Wood, 2008; Cooter & Alexander, 1984) while a fourth group identify these children as 'precocious readers'

(Durkin, 1990; Fogarty, 2009; Jackson, 1988). Within this final group, a small yet well-published subgroup, believe the ability to read beyond one's age peers should not be automatically considered an indication of giftedness.

In the late 1980s and 1990s there was a push to exclude highly able readers from gifted programs with the argument that 'not all academically gifted students read at high levels, and not all talented readers will be identified as academically gifted' (Durkin, 1990; Jackson, 1988; Reis et al., 2004). As mentioned, Dole and Adams (1983) identified that intelligence may not manifest in advanced reading performance in a child's early school years, and the research of Jackson (1988) and Durkin (1990) support this stance:

The relationship between general intellectual ability, as measured by scores on standard tests, and precocious reading ability has been investigated repeatedly and always has been found to be modest ... Neither does a high level of general intelligence guarantee that a child will be a precocious reader. (Jackson, 1988, p. 200)

In supporting this stance, these authors offer the condition of hyperlexia to sustain their argument for why precocious reading ability should not be linked to intelligence. Fogarty explains hyperlexia as:

Decod[ing] very early but with little sense of the meaning behind the text. These students have the ability to observe patterns that allow them to break the reading code.

Hyperlexia is sometimes found in children with autism. These students usually do not remain above-average readers once peers are able to decode well and comprehension has increased significantly in the ability to read well. (2009, p. 697)

A concern of Jackson's is that precocious readers were being placed into gifted programs in later years based on early reading precocity, and these children would not possess the necessary cognitive skills to cope with the work that would be expected of them. Her research shows only a 'modest association between precocious reading achievement and general intelligence' (1998, p. 202) and therefore, these students would not have the reasoning skills necessary in an elementary

gifted program. One flaw in this argument is the assumption that inclusion into gifted programs is reliant on a child's performance in their early years of school, rather than based on current performance.

While Jackson's research centres on preschool populations, her arguments have been supported and reinforced by later researchers with older children (Durkin, 1990; Reis et al., 2004; Reis, 2008). Jackson (1988) moderates the claim acknowledging a link between comprehension, language, knowledge and reasoning abilities 'as readers progress to more and more difficult texts, the upper limits of their comprehension will be related to their general language and reasoning abilities and their knowledge of the subject' (p. 200). However, Jackson and Durkin's stance is based on earlier views of the reading process that have since been usurped by more recent research and accepted understandings of what constitutes 'reading'. This will be discussed in section 2.3.4.

2.2.3 Gifted Models For Talented Readers

As mentioned, an author's preference for labelling 'gifted' or 'talented' often reflects his or her own preferred theoretical model of gifted pedagogy. Articles by Moore (2005) and Vosslamber (2002) attempt to define and cater for highly able readers using Renzulli's (1976) Three-Ring Conception of Giftedness (see Figure 2.2). Vosslamber(2002) took Renzulli's three clusters of human traits and dissected reading skills into the categories of *above average ability*, *task commitment* and *creativity*. For example, Vosslamber places characteristics such as strong comprehension, early reading, good memory and advanced IQ within the *above average ability* ring. Characteristics allocated to *task commitment* include long attention span, voracious reading, and indicators of *creativity* are reflected in complex thoughts and ideas, good judgement and high level of sensitivity (p. 16).

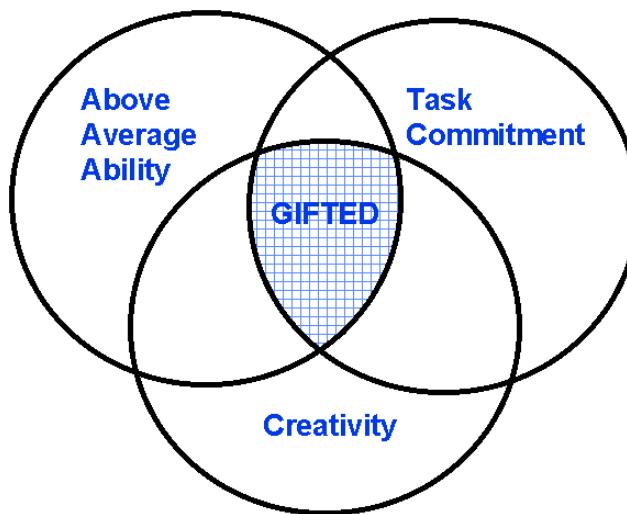


Figure 2.2. Renzulli's Three-ring conception of giftedness (1977).

While this definition utilises Renzulli's model to connect talented readers within a renowned gifted model, a shortcoming is the reliance on behavioural characteristics that are themselves based on anecdotal evidence. There is also little scope to explain the developmental process or measures that might separate advanced from typical reading ability. The model also fails to cater for the highly able reader who lacks self-belief or motivation (Gross, 2003). While not stated in the Moore and Vosselamer articles, Renzulli's model states that all three factors *must* be present for giftedness to exist; therefore, the *creativity* concept may be tenuous for poorly motivated talented readers.

In a similar vein, Reis, Eckert, Jacobs et al. (2005) developed the Schoolwide Enrichment Model-Reading Framework (SEM-R) specifically designed to increase attitudes towards reading, while increasing oral fluency and reading comprehension. The SEM-R has been validated through research using cluster-randomised methodology with experimental and control class groups. This model reflects Dole and Adam's (1983) definition of talented readers and builds on the original SEM-program designed by Renzulli and Reis (1997) as a three-phased program. Phase 1 is teacher focused with book talks, reading aloud together and higher level questioning. In Phase 2 students read silently and independently while the teacher assesses student comprehension with higher order questions during individualised reading conferences. Phase 3

allows the students to proceed with reading activities or short term projects based on a selection of choices that can include listening to books on CD, using technology, reading alone or with friends. Evaluating the effectiveness of this program ‘researchers found significant differences favouring the treatment group in reading fluency and/or comprehension as well as increases in students’ self-regulation to read for extended periods of time’ (Reis, 2008, p. 662). The SEM-R model offers differentiation designed to challenge talented readers; however, it does not explain the developmental processes involved in enabling and developing exceptional reading ability, nor does it factor intrapersonal issues that may influence long-term reading practices.

An alternate gifted model that does address these issues is François Gagné’s 2008 Differentiated Model of Giftedness and Talent (DMGT 2.0)(see Figure 2.2). This model has been adopted by some Australian education departments’ gifted policies such as New South Wales, ACT, Western Australia, Northern Territory and Victoria. The DMGT 2.0 was not designed for individual curriculum subjects such as reading. However, the model offers a multidimensional approach supportive of classroom reading pedagogy that presents the developmental process as well as the impact of environmental and intrapersonal catalysts, which is lacking in other gifted models.

Unlike Renzulli’s Three-Ring Conception of Giftedness model (1977) and Renzulli and Reis’ (2005) SEM-R that have been popular in the literature about talented readers, the DMGT 2.0 identifies specific domains that explain how natural abilities might manifest or transfer into exceptional performance. For example, the DMGT 2.0 presents the exceptional natural abilities (NAT) of intellect (IG), creative (CG), socioaffective (SG) and sociomotor (MG) domains that may eventually lead to exceptional performance, in one field or another. In addition, this model highlights the importance and the impact of intrapersonal catalysts (IC) such as motivation and self-management, in tandem with environmental catalysts (EC) such as milieu, persons and provisions, on the developmental process that may manifest or prevent exceptional performance. An important aspect of the DMGT 2.0 with regards to enabling a clear definition of talented

readers is the aspect of what constitutes ‘talent’. To be considered ‘talented’ in any area, performance must be in the top 10% of the population (see Figure 2.3). Gagné proposes that talent or ability is developmental and progresses through a series of stages including novice, advanced, proficient and expert, and differentiates talented and average performance with ‘pace’ being a main quantitative component when compared to age peers, or how fast a ‘talentee is progressing toward peak achievement’ (Gagné, 2011, p. 3).

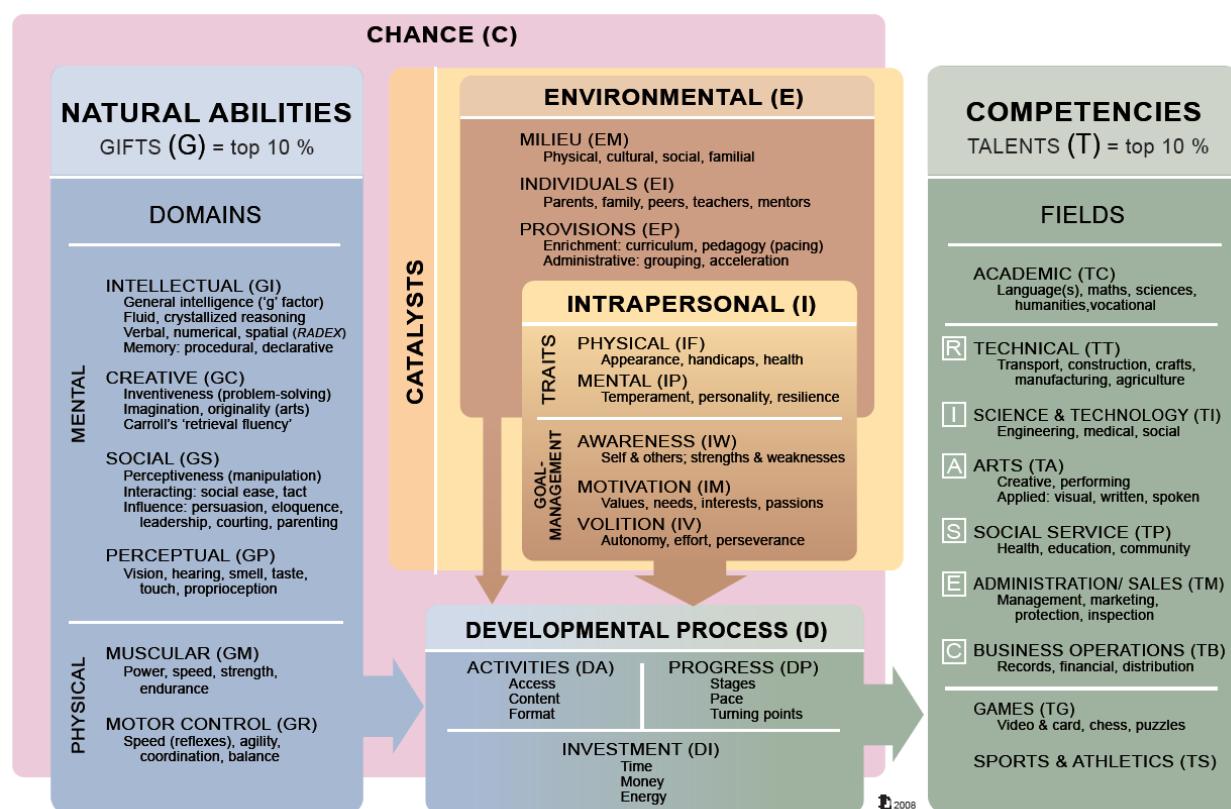


Figure 2.3. Gagné’s 2008 Differentiated Model of Giftedness and Talent (DMGT 2.0).

Because the DMGT 2.0 does not rely solely on characteristics, it may provide a more holistic model for defining and identifying talented readers, while also highlighting how intrapersonal and environmental catalysts can impact the developmental reading process. This clearly has direct implications for teachers and classroom practices, and also offers a way to work with standardised tests that employ percentage comparisons, as in Australia. The DMGT 2.0 explicitly focuses on the intricate interplay of interpersonal catalysts (exampled by motivation, work habits, adaptability) and environmental catalysts (family setting, educational experiences,

events) that can have positive or negative impacts on the development of gifts into talents. The DMGT 2.0 also presents chance factors, formerly placed in the Environmental Catalysts by Gagné in earlier versions of the DMGT, which are now given a higher profile in the updated 2.0 version; ‘chance influences all the environmental catalysts’ and ‘chance manifests itself in one other major event, namely the transmission of hereditary characteristics’ (Gagné 2004, p. 129). A strength of Gagné’s DMGT 2.0 as a proposed model for identifying talented readers lies in the dynamism of catalysts, which may or may not lead to the transformation of gifts into talents. This may offer an additional avenue for addressing some of the multidimensionality of advanced reading practices absent in other models.

The DMGT 2.0 has drawn criticism on two main points; these being the 10% threshold for the prevalence of giftedness in the population, and questions of the terminology used to distinguish innate abilities and systematically developed talents from aptitudes and achievements. Baer and Kaufman (2004) point out the vast difference in potential between the high achievement of extraordinarily gifted children and that of moderately or mildly gifted children, and that the potential gap between the mildly gifted and average children, is much closer. They are also concerned that if all levels of giftedness are included in the 10% cut-off, the very different needs of individuals within this range may be vast. At a recent conference Gagné (2012) acknowledged the inclusion of the potentially wide range of gifted children within the 10% benchmark in the DMGT 2.0 model, and indicated that there would be a wide range of teaching and learning needs within this group.

2.2.4 Current Issues for Talented Readers

Talented readers are placed at risk in many schools. Many are not challenged and, therefore, their reading development can be delayed or even halted.

Reis, 2008, p. 664

This is a powerful quote that squarely places blame on the shoulders of educators and schools when young talented readers fail to reach their potential. There is little doubt the

statement is an attempt to shift naïve and myopic attitudes of teachers who consider the learning needs of talented readers unnecessary (Wood, 2008). Reis et al.'s (2004) study included a number of quotes by classroom teachers supporting a narrow point of view, as reflected in the following example: 'What choice do I have? With this kind of spread, perhaps 8 or 9 years, my moral obligation is to spend more time with the kids who read on first grade level or lower' (p. 78).

2.2.4.1 Lack of knowledge, training and understanding

Aside from poor teacher training that fails to inform teachers of the specific learning needs of talented readers, Reis (2004, 2008) also identifies a lack of appropriate resources within schools as a contributing factor; specifically, the need for challenging reading materials with advanced reading skills, and emotionally and chronologically appropriate content. It is this researcher's experience and opinion that because there is less reliance on basal reading schemes in Australian reading classrooms, there is a rich supply of appropriately challenging and levelled books available.

Current teacher education programs for pre-service teachers places a good deal of emphasis on promoting the need to match instruction with learners' skills and abilities in providing continued and appropriate skill development. Chall and Conrad (1991) called for an 'optimal match' to ensure learning is efficient and avoids halted development. Vygotsky's (1978) Zone of Proximal Development (ZPD) another popular theory taught in pre-service courses, highlights the need to bridge 'the distance between the actual developmental level as determined by independent problem solving, and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers' (1978, p. 86). Therefore, if these theories are basic to Australian teacher education programs, why then are talented readers perceived as needing less teacher guidance than typical and struggling readers?

The answer may lie in the dark side of altruism and the social-cultural attitudes towards gifted education. According to Gagné 'gifted education holds a marginal position within the larger field of general education' (2011, p. 7). Or, is it as Tomlinson (cited in Tomlinson, Kaplan

et al., 2002) states ‘there is no incentive for schools to attend to the growth of students once they attain proficiency, or to spur students who are already proficient to greater achievement, and certainly not to inspire those who far exceed proficiency’ (p. 36). Therefore, why continue to provide skill development and learning support for those readers who have already mastered skills years beyond their age peers?

2.2.4.2 Are there consequences to ‘leaving them alone’?

In 1988 Perkins and Salomon wrote a paper on ‘Teaching for Transfer’ in which they presented the ‘Bo Peep’ theory of transfer adapting the nursery rhyme ‘*leave them alone and they will come home, wagging their tails behind them*’ as a metaphor for their findings. This present researcher postulates that a ‘Bo Peep’ theory might also be an appropriate metaphor for teacher attitudes towards talented readers. The Reis et al. (2004) study documented a collection of comments by classroom teachers sharing the attitude that talented readers are already performing well and therefore, do not need special learning programs: ‘They are reading above grade level so I don’t work with them …’ (Reis et al., 2003, p. 69). So are there consequences if talented readers are ‘left alone’?

Unfortunately, the evidence shows there *are* consequences for failing to provide continued appropriate reading programs for talented readers. These include never learning to exert effort in reading and as a result developing poor work habits. Reis states it clearly: ‘some talented readers grow accustomed by third or fourth grade to expending minimal effort and learn few self-regulation strategies and few advanced reading strategies that they can use when they have to read more challenging content’ (Reis, 2008, p. 664). So, is there a correlation between these United States findings and the Australian context? How do talented readers fair in the Australian education system?

Every three years, the Organisation for Economic Cooperation and Development (OECD) assesses 15 year olds in member countries as they near the end of compulsory education in an assessment task titled the Programme for International Student Assessment (PISA). The focus is

to evaluate and compare the standard of knowledge and skills of these students as they embark on their entry into society. The following excerpt is from the latest (2009) PISA Australian report written by the Australian Council for Educational Research (ACER).

Australia was the only high performing country to show a significant decline in reading literacy performance in PISA 2009. Of concern is that the decline is primarily among high-achieving students, and that the proportion of both males and females in the highest two proficiency levels declined significantly over the nine-year period, while the proportion of males in the lowest proficiency levels increased... In terms of proficiency levels, the proportion of students who achieved Level 5 or 6 declined significantly between PISA 2000 and PISA 2009, from 18 per cent in PISA 2000 to 13 per cent in PISA 2009. (Thomson et al., 2011, p. 18)

Within Australia there is an annual national assessment program of literacy and numeracy performance of students in Years 3, 5, 7 and 9 conducted by the Australian Curriculum, Assessment and Reporting Authority (ACARA). The tests are titled the National Assessment Program – Literacy and Numeracy (NAPLAN). The 2010 results reflect a declining trend in the performance of the talented readers as they progress through the system as reflected in Table 2.1.

Table 2.1

NAPLAN Reading Results in the highest bands across Year groups

	Year 3	Year 5	Year 7	Year 9
Highest Band	6	8	9	10
Population	22.2%	10.3%	10.1%	4.1%

Summarised from:

http://www.naplan.edu.au/verve/_resources/NAPLAN_2010_Summary_Report.pdf

This decline at the top end of reading performance in the older years is not unique to the Australian context. Halsted (cited in Reis et al., 2004) believes the drop-off in reading levels during middle school years should be ‘blamed’ on an increased participation in extracurricular activities or an absence of challenging reading in school. Halsted also believes that if a child has

become an independent reader by Year 2, they will have well-established reading patterns and habits by Year 5 that may be entrenched and difficult to shift beyond their comfort levels in later years. This current researcher gathered anecdotal evidence presented in Chapter One that supports this view. In discussions with former students some still engaged in recreational reading in senior years, preferring their own choice of authors rather than those texts they were being *forced* to read in English classes. Others had naturally outgrown former favourite authors, and no longer read fiction at all. Many of the students questioned, found the Stage 5 and 6 English curriculum texts unappealing and they were not prepared to sustain effort on these challenging texts. This anecdotal evidence reflects the 2007 study by Reis and Boeve (as cited in Reis, 2008) in which they identified that ‘the reading levels of these (talented readers) students may decline by the time they reach upper elementary as a result of an absence of challenge in reading in school’ (p. 657). Reis et al. (1995, as cited in Reis, 2008) found that underachieving readers in high school ‘consistently acknowledged that the easy curriculum they encountered in elementary and middle school failed to prepare them for the rigors of challenging classes in high school’ (p. 659).

So while a decline in the numbers of older students performing at the top reading level compared to younger readers is not unusual (Halsted), the afore mentioned PISA results is not so easily explained, when this trend is not replicated in other first-world countries such as Korea, Finland, Canada and New Zealand. Therefore, ‘*leaving them alone*’ does not appear to be an option that is enabling young talented readers to continue, ‘*wagging their tails*’ as they progress through the English curriculum.

2.2.4.3 Programming options

While minimal research informs this field, a number of authors have addressed the perceived learning needs and programming options that in their opinion should be offered to talented readers. For example Dooley (1993) states:

A stimulating reading program for young gifted readers has at least two major

components: provisions for mastering the basic curriculum quickly through curriculum compacting, and a differentiated curriculum created through modification of the content and the processes used to explore that content. (p. 547)

Overwhelmingly, authors support the use of gifted pedagogy when catering for talented readers, including acceleration, curriculum compacting, critical questioning and higher order thinking(Reis, Burns & Renzulli, 1992; Dooley, 1993; Moore, 2005; Reis, 2008; VanTassel-Baska et al., 1988; Wood, 2008). Even Jackson (1988), who focused on proving minimal correlation between precocious reading ability and academic intelligence stated ‘consultation with a reading specialist is just as appropriate in planning instruction for an unusually precocious reader as it is in planning for a reader who is progressing slowly’ (p. 203). Educational psychologists specialising in gifted education, such as Gagné (2011) and Gross (2003), clearly state that talented students require an enriched curriculum that is qualitatively and quantitatively different from that offered to typical students. Gagné summarised these components as:

- (1) An enriched curriculum / training program;
- (2) A clear and challenging excellence goal;
- (3) Selective access criteria;
- (4) Systematic and regular practice;
- (5) Regular performance-based assessment of progress;
- (6) Personalised – accelerated of course – pacing. (2011, pp. 6-7)

These components are reflected in the ‘research supported methods for instruction and curriculum for talented readers’ collated by Reis (2008, p. 663) in Figure 2.1.

Curriculum compacting	Reis, Burns & Renzulli, 1992; Reis et al., 2005
Acceleration	Southern & Jones, 1992
Substitution of regular reading material with more advanced trade books	Reis et al., 2005; VanTassel-Baska, 1991
Appropriate use of technology for talented readers	Alvermann, Moon & Hagood, 1999; Reis et al., 2005
More complex reading and writing	Ries et al., 2004; VanTassel-Baska et al., 2002
Independent reading choices	Reis et al., 2005; Renzulli & Reis, 1989
Independent writing options	VanTassel-Baska et al., 2002
Independent study and project opportunities	Reis et al., 2005; Renzulli & Reis, 1989; VanTassel-Baska et al., 2002
Grouping changes (within or across classes)	Kulik & Kulik, 1991; Reis et al., 2005; Rogers, 1991
Thematic instructional changes for talented readers (tiered reading for thematic units)	VanTassel-Baska et al., 2002
Substitution of regular instructional strategies with other options	Renzulli & Reis, 1989; Reis et al., 2005; VanTassel-Baska et al., 2002
Advanced questioning skills and literary skills	Reis et al., 2005
Interest assessment and interest-based reading opportunities	Reis et al., 2005

Figure 2.4. Differentiated Instructional or Curricular Strategies to Challenge Talented Readers.

While comparison of these two sources suggests talented readers require similar learning design and program options as any gifted and talented student, there is research to suggest that gifted pedagogy may not automatically suit the learning needs of talented readers, and that adjustments may be necessary. For example, Reis states ‘differentiation for talented readers has met with varied results’ (2008, p. 662). The study by Reis and Boeve (2007, as cited in Reis, 2008) entailed twelve sessions of intense instruction with self-selected reading materials, with a group of culturally diverse third and fourth graders who were considered academically talented readers. These participants achieved similar fluency growth during these limited sessions as

might be expected of most readers in a year. However, when these same students were returned to their school reading programs, and expected to work at above-grade-level readings, they experienced unexpected difficulties because:

These talented urban readers were accustomed to expending minimal effort and had few self-regulation strategies to employ and few advanced reading strategies that they could use when they were asked to read material that was slightly above their grade level. (Reis, 2008, p. 662)

So while adapted and enriched programming options might be appropriate and necessary for talented readers, a number of as yet unquantified aspects can undermine success. Clearly more research is required in this field.

2.2.5 Conclusion

This section has examined some of the limited research and anecdotal writings published about talented readers. It has reviewed some of the problems associated with defining this population, including issues with terminology, characteristics and suitable gifted models. Finally, this section has addressed some of the current educational issues that can impact on talented readers, including the lack of knowledge, understanding and effective programming options that should be considered in meeting their learning needs. In a review exploring the research on talented readers, it is necessary to briefly explore relevant issues pertaining to research on reading pedagogy, as will be presented in the following section.

2.3 Reading

Written word processing starts in our eyes. Only the centre of the retina, called the fovea, has a fine enough resolution to allow for the recognition of small print. Our gaze must therefore move around the page constantly. Whenever our eyes stop, we only recognise one or two words. Each of the words is then split up into myriad fragments by retinal neurons and must be put back together before it can be recognised. Our visual system progressively extracts graphemes, syllables, prefixes, suffixes, and word roots.

Dehaene (2009, p. 11)

2.3.1 Introduction

In keeping with the specific focus of the present study, this section of the literature review will briefly overview some of the current reading pedagogical underpinnings as aligned to the skills, knowledge and understandings of efficient readers. This will include two primary foci, that being the science of reading, including some of the latest research in neuroscience revealing the *reading brain*, and how reading pedagogy has evolved in Australia. This focus will enable a baseline for understanding what constitutes ‘reading’ in current contexts and how this impacts on young talented readers in this country.

2.3.2 The Reading Process

Teaching reading IS rocket science.

Louise Moats

In the previous section the debate about whether talented readers should be considered intellectually gifted was briefly discussed. The argument presented by Jackson (1988) focused on a number of studies and anecdotal writings comparing academically gifted children with young precocious readers. Jackson highlights the differences she has noted in the performance of precocious readers as being ‘dramatic’ (p. 203). These differences in reading ability range from the ability to decode almost any word, regardless of complexity, to those who use the context of the text to gain the necessary clues to decode the meaning. She also notes that some precocious

readers are able to write and spell well at an early age, while others are unable to do this until they have developed advanced comprehension ability (p. 203). This debate now requires an understanding and clarification of what constitutes ‘reading’.

Our understanding of reading today is that of a multidimensional construct that employs a number of skills and knowledge that meld together to support this meaning making process. Simple decoding without understanding, reciting words or memorised passages, also known as ‘barking at print’, is not reading as understood in current pedagogical practice. The evolution of the teaching of reading will be explored further in section 2.3.4. Before this, however, a very brief overview of how neuroscience is increasing our understanding of the reading process is discussed in the next section.

2.3.3 The Neuroscience of Reading

The brain’s function in reading, which has for many centuries remained a mystery (Dehaene, 2009), is now revealing its secrets with advancements in brain imaging research. Functional magnetic resonance imaging (fMRI) ‘images blood oxygen levels in active areas of the brain’ (Geake, 2009, p. 33) when stimulated. Neuroscience has made recent advancements in identifying the *reading circuitry*, by highlighting the many components and processes the brain engages in whilst reading. These range from visual pattern recognition systems, to the cognitive and linguistic systems (Dehaene, 2009; Sandak, Mencl, Frost & Pugh 2004; Tan, Spinks, Eden, Perfetti, & Siok, 2005). This imaging process has also revealed that regardless of culture or language, as long as a reader has not experienced physical trauma, brain activity is the same in all people, of all cultures during the reading process.

Reading is a cognitive, social and cultural activity that dates back five thousand years and whose surface forms are different from one culture to another. ... what is amazing is that in spite of these vast differences in the way we learned to read, we all call on the same areas of the brain to recognise the written word. (Dehaene, 2009, pp. 71–72)

Reading is a multidimensional and complex process that has developed as a direct result of the human invention of writing. Denaene (2009, p. 4) discusses the enigma that he calls the *reading paradox*, or why does our primate brain read? He asks ‘why does the brain have an inclination for reading although this cultural activity was invented only a few thousand years ago?’ (p. 4) Scientists have discovered that the brain and eye are poorly equipped for the act of reading, as Denaene’s quote at the beginning of section 2.3 reveals. The act of reading alters the brain’s ‘genetic blueprint that allowed our hunter-gatherer ancestors to survive’ (p. 4). It is brain plasticity that enables ‘brain rewiring’ so that this complex communication and cultural transmissions can occur. Tomasello (as cited in Denaene, 2009, p. 316) explain this process further:

The adaptation for culture begins to make itself manifest in human ontogeny at around one year of age as human infants come to understand other persons as intentional agents like the self and so engage in joint attentional interactions with them. This understanding then enables young children to employ some uniquely powerful forms of cultural learning to acquire the accumulated wisdom of their cultures.

This neurological perspective has been included in this literature review as it supports education’s current understandings of the reading process, that being a socio-cultural practice. This will be discussed further in the next section.

2.3.4 The Reading Process: an Australian Perspective

Reading pedagogy has, as with all areas of education, evolved as a response to the changes in the ideological and cultural influences of the society it serves. Human activities, such as reading, take place in cultural contexts, and are mediated by language and other symbol systems (John-Steiner & Mahn, 1996). To have a better understanding of reading pedagogy as it is taught in Australian schools today, a brief overview of this evolutionary process is now presented.

Turbill (2002) gives a succinct representation of this evolution through her Four Ages of Reading Pedagogy:

1. The age of reading as decoding
2. The age of reading as meaning making
3. The age of reading-writing connections
4. The age of reading for social purposes

The *age of reading as decoding* that dominated teaching practices from the 1950s through to the early 1970s focused on decoding and phonics based on the ideology that ‘if we taught children how to decode, comprehension would follow’ (Turbill, 2002, online). In the late 1970s the *age of reading as meaning making* began as focus shifted onto the individual child as a learner. One theoretical representation of reading at this time (and still currently taught in pre-service teaching literacy courses) can be viewed in Figure 2.5. Efficient readers create meaning through the employment of the three cues or subsystems of semantic (knowledge of the field), syntactic (grammar) and graphophonic (graphology and phonology) knowledge (Harris, Turbill, Fitzsimmons & McKenzie, 2006).

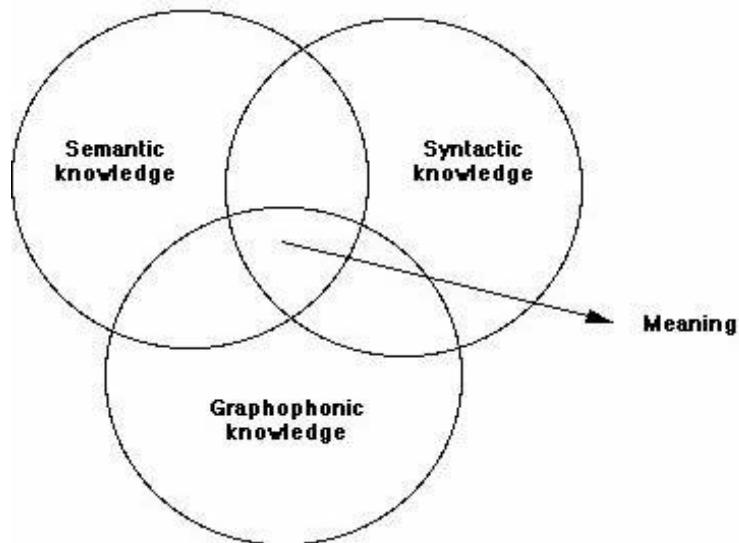


Figure 2.5. The Three Cueing System of the Reading Process.

The *age of reading-writing connections* evolved in the early 1980s, when research showed that children actually begin to develop literacy abilities and skills before school. Functional linguists, such as Halliday (further discussed in section 2.4.3) was one of a group of researchers

who influenced the teaching of reading at this time, and pedagogy broadened to include different text types, such as non-fiction and fiction into reading programs.

The early 1990s hailed the *age of reading for social purpose*, evolving in response to a change in understandings about literacy as socio-cultural practice. Freebody and Luke (1990) contextualised these new understandings into their Four Resources Model (see Figures 2.5 & 2.6). The Three Cueing System was integrated into the Four Resources model to create a Social Model of Reading as presented in Figure 2.5. The Four Resources Model identifies ‘roles’ that efficient readers employ when reading. As Freebody and Luke (1999) explain:

The model posits four necessary but not sufficient ‘roles’ for the reader in a postmodern, text-based culture:

- Code breaker (coding competence)
- Meaning maker (semantic competence)
- Text user (pragmatic competence)
- Text critic (critical competence)

(Luke & Freebody, 1999, online)

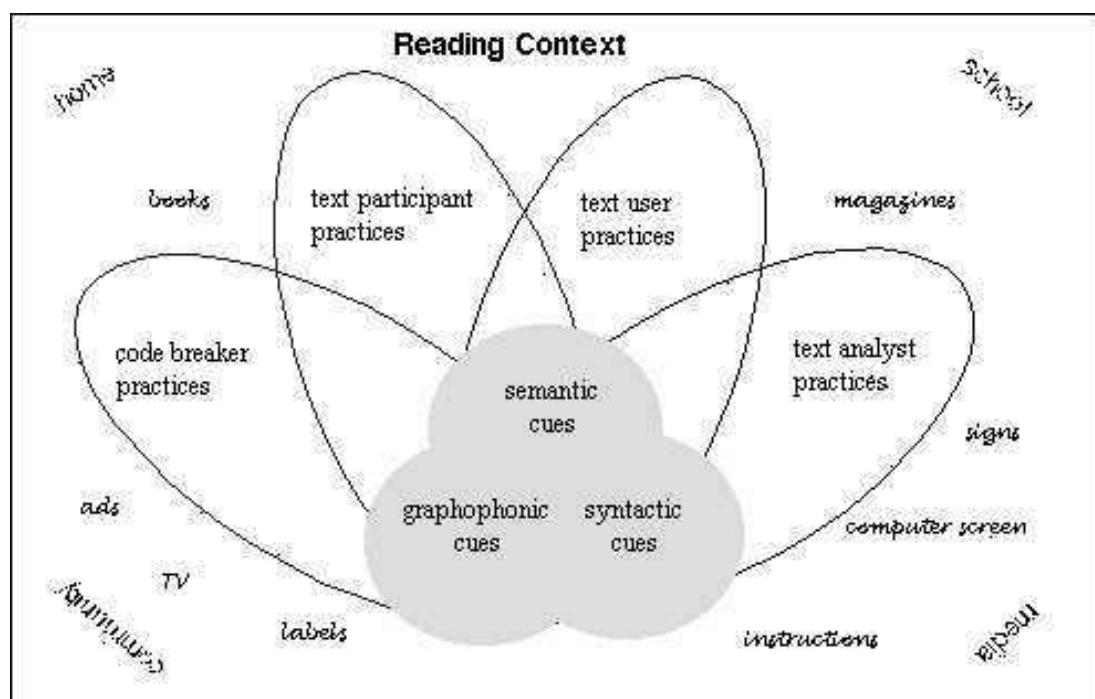


Figure 2.6. A social model of reading by Turbill, (2002).

Turbill (2002) correctly predicted reading pedagogy moving into a fifth age, *the age of multiliteracies* in response to the influx of technology into everyday lives. Cope and Kalantzis (1996) identified the Five Semiotic Systems that currently impact pedagogical practices as:

- Auditory: Music, sound effects, silence
- Gestural: Facial expressions, body posture
- Linguistic: Grammar, punctuation, alphabets
- Spatial: Organisation of objects in a setting
- Visual: Still images, moving images, page or screen, layout, colour

These Five Semiotic Systems have not replaced the earlier models but coexist with the Three Cueing System and the Four Resources Model. This is a simplistic overview of *some* of the many aspects that impact reading pedagogy in this country today, but gives a snapshot of the plurality of skills and knowledge required by efficient readers in the twenty-first century, if they are to successfully make meaning from texts. The metalanguage of reading also continues to evolve and reflect this expanding construct. As can be seen in Figure 2.6 the term ‘text’ includes a myriad of options of anything that can be ‘read’ such as digital information, posters, paintings, film and even body language. Freebody and Luke (2000) define reading today as ‘the flexible and sustainable mastery of a repertoire of practices with texts of traditional and new communication technologies via spoken, print and multimedia’ (p. 9).

As an aside, neuroscience research into reading is suggesting ‘the systematic teaching of letter-to-sound correspondences [phonics] – seem to work better than whole-word teaching’ (Dehaene, 2009, p. 3), and that early research supporting the whole-word approach was erroneous. If neuroscience research can prove this hypothesis, and the evidence is still some way off due to limitations of the imaging tools, this may one day have an impact on how reading is taught. However, as currently a rich evidence base exists in ‘whole-word’ research, it is likely this debate will be an extended one. Or maybe Dehaene’s claim simply reflects an outdated

understanding of current reading pedagogy practices. It certainly appears that as technology and science improve, interesting times lie ahead for researchers and teachers of reading.

2.3.5 *Reading and Intelligence*

This section returns to Jackson's (1988; 1982; 1998) discussion about precocious readers and intelligence. The definition of *reading*, as presented in the last section, demonstrates why hyperplexia cannot and should not be considered *reading* as the definition currently exists in this country. Decoding letters and words without meaning, or reciting slabs of passage from memory, is not *reading* in the context of current pedagogy. This challenge to Jackson's perspective therefore also questions her argument that children can be precocious readers, irrespective of their intelligence. Neuroscience has confirmed what teachers of reading have always known, that 'years of hard work are needed before the clockwork-like brain machinery that supports reading runs so smoothly that we forget it exists' (Dehaene, 2009, p. 4). While most healthy brains have the architecture necessary to allow for the cognitive 'rewiring' that enables reading, some children pass through this stage years quicker than their peers. Whether this rewiring of the brain is related to intelligence is still unproven, yet the ability to comprehend text, to be fully integrating the four reading 'roles' while still very young children certainly suggests an advanced level of intellectual competency. This current study has demonstrated how Gagné's DMGT 2.0 supports the multidimensional nature of how natural abilities, catalysts and the developmental process combine for outstanding performance. Therefore, this study adopts Gagné's definition of 'talent' when describing outstanding reading performance when compared with the reading performance of typical age peers.

2.3.6 *Conclusion*

This section has briefly presented some of the major theoretical influences of theories and practices that currently impact reading pedagogy in this country. Another important theoretical component of the reading process is that of metacognition. Research exploring the relationship between metacognition and reading will be explored in section 2.5.8.1.

2.4 Critical Literacy

Trust me, Wilbur. People are very gullible. They'll believe anything they see in print.

Charlotte from ‘Charlotte’s Web’ by E.B. White (1973)

2.4.1 Introduction

Critical literacy as a theory and practice has been infused within Australian literacy pedagogy since the nineteen-eighties. It has been described as a socially-critical, discourse/text based approach to literacy (Luke, 2000) and, by its very nature is an evolving, fluid concept. While there are basically two major theoretical perspectives today, Neo-Marxist/Freirean critical literacy and Australian critical literacy (Misson & Morgan, 2006), this review will focus on the latter as it applies to present literacy education practices and pedagogy in this country. This section will explore the definition of critical literacy, historical roots, and evolution into its current embodiment as *Australian Critical Literacy*. Finally the guiding principles of critical literacy will be presented in light of education expectations in this country.

2.4.2 Definition

Books can deceive, delude, and misrepresent, as readily as they can enlighten and expand our knowledge.

Allan Luke 2004a, p. 4

Reading has been shown to be a multidimensional sociocultural practice, with meaning making the basic tenant of this activity. Critical literacy moves beyond this, providing the reader with the tools to identify and analyse textual bias, power ideologies and author intent (Janks, 2010; McDaniel, 2004; Griffith & Ruan, 2005).

Putting ‘critical’ in front of the word ‘literacy’ serves the same function as it does in front of the words ‘psychology’ (Rose, 1989), ‘geography’ (Soja, 1996) or ‘multiculturalism’ (May, 1997). It signals a move to question the naturalised assumptions of the discipline, its truths, its discourse and its attendant practices.

(Janks, 2010, p. 13)

Advocates of critical literacy do not always agree on the boundaries of the concept, but do agree that it ‘transcends conventional notions of reading and writing’ (McDaniel, 2006, p. 5). As such, it has regularly been the focus of criticism and derision from social and political forces, particularly in this country. The teaching of critical literacy in Australian classrooms has in recent years, been ‘under attack’ by ‘warring parties’. One ‘weapon’ utilised by opponents in this on-going ‘war’ has been the purposeful blurring of definitions. Therefore, clarification is not just a logical, but also an essential element for this review. The metaphorical ‘battlefield’ that has dogged critical literacy since its inception in Australia will be discussed in section 2.4.3.

Defining critical literacy as a pedagogical practice can be difficult. This is attributed to the dynamic nature of the concept that requires different methods, techniques and practices to be utilised within different contexts (Knobel & Healy, 1998; Lankshear, 1994; McLaughlin & DeVood, 2004). Whilst in many education systems across the world ‘almost everybody promotes critical literacy practices as important educational goals, (but) not everybody agrees on what critical literacy is and on what its outcomes should be’ (Knobel & Healy, 1998, p. 1). In addition, there has been a sense of confusion and misrepresentation that Janks (2010) believes to be linked, in part, to the infamous ‘literacy wars’ that have shadowed literacy pedagogy in recent decades.

The *literacy wars* have involved arguments about:

‘... whether literacy is a cognitive skill or a social practice, either-or thinking that generates further binaries: phonics or whole language, bottom up or top down, back to basics or meaning making, popular culture or the literary canon, genre approaches to writing or progressive approaches and so on ad infinitum. (Janks, 2010, p. xiii)

Australian critical literacy has evolved into its own unique form as explained by McDaniel (2006), ‘in contrast to educational practice in the United States, teachers in Australia generally present texts to students with an emphasis on their underlying power-laden qualities, encouraging critical reading and analysis in the classroom’ (p. 26). The defining essence of critical literacy, as taught in Australian classrooms, entails teaching students how to identify power structures,

dominant ideologies and discourses within texts. However, Allan Luke (2000), an Australian academic who has made significant contributions to literacy theory in this country, suggests that the current version of Australian critical literacy is ‘just a watered down version of educational progressivism’ (p. 449). Luke, along with other advocates, such as Australian Wendy Morgan and South Africa’s Hilary Janks, believe that critical literacy should follow through to the point where ‘so enlightened, students will be empowered and will demonstrate their emancipation by practising an active citizenship to help right society’s wrongs’ (Morgan 1997, p. 6). *Australian-style* critical literacy will be further discussed in section 2.4.3.

Critical literacy has been described as a ‘fluid concept’ and a ‘chameleon’, because by its very nature, it is intentionally influenced and moulded by context and purpose. Integrating and combining the definitions proffered by eminent authors such as Luke (2000), Morgan, (1997), McLaughlin and DeVoogd (2004) and Stevens and Bean (2006) critical literacy, in this present study is defined as *an analytical process that critiques the language of texts identifying bias, inequitable social practices and issues of power while encouraging reflection, transformation and action.*

The following section will look briefly at the genesis of critical literacy, and how different ideologies have influenced the evolutionary process that have contributed to the development of Australian Critical Literacy.

2.4.3 Evolution of Critical Literacy

Struggles to define the world and claim its goods, are carried out by unequally matched contestants; for certain social groups have historically controlled the ideologies, institutions and practices of their society, thereby maintaining their dominant position.

Wendy Morgan (1997)

2.4.3.1 Paulo Freire

Critical literacy traces its geneses back to the life work of Paulo Reglus Neves Freire. Born into a middle-class family in Brazil in the 1920s, his family, like many others at that time, was

directly affected by the 1929 Depression (Shaull, 1993), and as an eight-year old child he experienced poverty and hunger for the first time in his life. This experience had a profound effect on Freire directly impacting on his education, physical and emotional development, and eventually his life's work. During these difficult years Freire fell four year grades behind in his development at school; 'I didn't understand anything because of my hunger. I wasn't dumb. It wasn't lack of interest. My social condition didn't allow me to have an education' (Freire cited in Stevens, 2002, online).

The truth of this quote became clear as his family's circumstances improved and Freire's education achievements and progress improved exponentially. Eventually, he was accepted into university, studying and qualifying for a law degree. However, as a direct influence of his early life experiences he chose to follow a different path. He retrained as a teacher and went on to develop adult literacy programs for the uneducated and poor living in the slums and rural areas of Brazil. During his years of poverty he discovered what he describes as the 'culture of silence of the dispossessed' (Shaull, 1993, p. 12). He believed that

... their ignorance and lethargy were the direct product of the whole situation of economic, social, and political domination ... of which they were victims. Rather than being encouraged and equipped to know and respond to the concrete realities of their world, they were kept "submerged" in a situation in which such critical awareness and response were practically impossible. And it became clear to him that the whole educational system was one of the major instruments for the maintenance of this culture of silence. (Shaull, 1993, p. 12)

Freire dedicated his life to the belief that it was not enough to simply teach people *how* to read, 'the literacy process must include the relationships of [people] with their world' (Freire, 1970, p. 212) because 'the word is not something static or disconnected from [people]'s existential experience, but a dimension of their thought-language about the world' (p. 215). This thinking, coupled with his actions of teaching the illiterate to read and write, was considered a

crime by the dictatorial governments of Brazil and Nicaragua in the 1960s and 70s. ‘What the Nicaraguan government rightly recognised was that literacy empowers people’ (Green, 2006, pp. 8-9). Freire’s continuing work with illiterate adults reinforced his conviction that literacy both empowered and disempowered people. He passionately believed literacy was the vehicle that would give the under-classes the tools for improving their lives (Shaull, 1993; Siegel & Fernandez, 2000; Stevens, 2002). For example, in Brazil at that time only those who could read and write were allowed to vote in local and national elections. Freire’s philosophy saw literacy as a ‘mode of intervention, a way of learning about and reading the world as a basis for intervening in the world’ (Giroux, 2011, p. 155). These skills could then enable an ethical and socially responsibility in people, which in turn could transform the world (Siegel & Fernandez, 2000). Freire’s beliefs and work eventually led to his exile by the government. In the mid 1970s, as Freire’s writing spread across the world, academics in first-world countries such as the United States and the United Kingdom began questioning the institution of schooling as a political practice whose primary aim was social regulation (Siegel & Fernandez, 2000). Schooling came to be seen as ‘an efficient and rational way of sorting and selecting talented people so that the most able and motivated attain the highest status positions’ (Hurn, 1993, p. 2). This movement identified knowledge, and its uneven distribution, as critically empowering and as disempowering as money within capitalist societies (Siegel & Fernandez, 2000). Freire’s work was labelled Marxist and Post-Modern because it challenged religious, social, cultural and education traditions (Kruse, 2006). These labels continue to be used by opponents in Australia today in an attempt to use a fear-based leverage to misrepresent its tenets (Sawyer, 2004). Critical literacy has been blamed as a harbinger in the demise of traditional values in education ‘dominated by intellectual jargon, lack of standards, and culturally destructive interests’ (Kruse, 2006, p. 15). These issues will be discussed further in section 2.4.3.3.

A number of philosophical movements are imbedded within critical literacy pedagogy, and some of these will be briefly discussed in the following sections.

2.4.3.2 Post-modern, socio-cultural and post-structuralist theories

Luke (2000) identified a number of renowned post-modern theorists who played a role in the development and evolution of critical literacy theory in its current form. For example, Voloshinov and Bakhtin's identification of how multiple voices serve the intrinsic and extrinsic interests of a text; Michel Foucault's views that texts position readers in particular ways for specific purposes; Jacques Derrida's focus on how certain groups are marginalised and silenced in texts; and Pierre Bourdieu's view of language as social capital, and how texts perpetuate the authority of dominant institutions and groups within a society.

Sociocultural theory evolved in part from the work of Vygotsky (1986), and is fundamentally important to critical literacy pedagogy. Vygotsky saw learning as being 'embedded within social events and occurring as a child interacts with people, objects, and events in the environment' (Kublin, et al., 1989, p. 287). Critical literacy pedagogy shares sociocultural philosophy of language being bound by culture and society.

Accepting the notion that language learning is 'cultural' rather than 'natural' shifts language away from the realm of personal development. Instead, language learning becomes 'cultural capital', particular and culturally determined ways of doing things; not the only ways, but the ways that happened to be valued by dominant groups in the society. (Green, 2006, p. 19)

These aspects of sociocultural theory are fundamental in developing frameworks of analysis and understanding within critical literacy practice. For example, the cultural worldviews of an author are revealed through the language choices and ideologies that are overtly or covertly presented in a text, as much as texts are 'read' through the cultural and worldview lens of the audience. Schill (2003) describes this aspect as '... the cultural assumptions of the composer – his or her worldview or ideology, or the way he or she sees the world, how he or she thinks it should be, and the way he or she sees his or her place in it' (p. 8).

Another theory imbedded within critical literacy pedagogy is the post-structuralist belief of ‘no ultimate truth’. Post-structuralism, as it exists within literacy pedagogy, as explained by Green (2006) claims:

There can be no definitive meaning of a text... meanings are constructed in the act of reading, viewing and listening; and therefore will vary according to who,... when and where they are reading, viewing and listening; and for what purposes they want text information. Any text contains the possibility of multiple meanings, and these meanings will vary according to context: social, cultural, historical and discursive. (p.12)

Each of these theories highlights some of the signifiers that may be utilised when analysing texts through the lens of critical literacy. The following sections will further demonstrate how these separate constructs and theories have manifested in present representations of critical literacy.

2.4.3.3 What critical literacy is not

The words ‘critical’ and ‘literacy’ can, and are misunderstood and misrepresented even by experienced educators (Luke, 2000). Critical literacy is not critical reading, although they share some aspects. Each has evolved from very different philosophical orientations, with critical reading developing from the liberal-humanist philosophical tradition (Stevens & Bean, 2005). Critical reading became a popular pedagogical literacy practice between the 1940s and 1970s and involves skills such as distinguishing between fact and opinion, making judgements and forming opinions, recognising an author’s purpose and investigating sources (Spache, 1964). The similarities between critical reading and critical literacy are clear; however, critical literacy is philosophically different in that it aims to develop reflexivity in students, developing a relationship between the text, self and the world, and taking action based on these understandings. Cervetti, Paradales and Damico (2001) demonstrate the differences between these two critical perspectives in Figure 2.7 below.

Critical Reading	Critical Literacy
Focus: context, intentions, style of communication	Focus: assumptions, knowledge production, power, representation and implications
Aim: to develop critical reflection (ability to perceive intentions and reasons)	Aim: to develop reflexivity (ability to perceive how assumptions are constructed)
Language: is fixed and translates reality	Language: is ideological and constructs reality
Reality: Exists and is accessible, but it is often translated into false representations	Reality: Exists, but is inaccessible (in absolute terms) – we have only partial interpretations constructed in language
Knowledge: False versus true interpretation of reality	Knowledge: Always partial, context dependent (contingent), complex and dynamic
<p>Types of questions:</p> <ul style="list-style-type: none"> • What is the context? • To whom is the text addressed? • What is the intention of the author? • What is the position of the author (his/her political agenda)? • What is the author trying to say and how is he/she trying to convince/manipulate the reader? • What claims are not substantiated? • Why has the text been written in this way? 	<p>Types of questions:</p> <ul style="list-style-type: none"> • What could be the assumptions behind the statements? • How do you think the author understands reality? What could be shaping his/her understanding? • Who decides (what is real, can be known or needs to be done) in whose name and for whose benefit? • What could be the implications of his/her claims (past/present/future: social, environmental, economic, etc...)? • How could these statements be interpreted differently in different contexts? • What are the sanctioned ignorances (blind spots) and contradictions?
Adapted and expanded from: Cervetti, Pardales & Damico (2001) by OSDE (online)	

Figure 2.7. The Difference Between Critical Reading and Critical Literacy.

2.4.4 Uniquely Australian

Contemporary literary theory helps students reshape their knowledge of texts, of themselves, and of the worlds in which both reside.

Appleman, 2000, pp. 138–139

According to Condren, Waldrip and Knight (2003) critical literacy was first introduced to Australian teachers in the mid 1980s as a component of two staff development courses, the *Further Literacy In-Service Program* and the *Boys in Literacy Professional Development* courses. The concept gained influence through a number of secondary English textbooks that specifically targeted gender issues that Condren et al. explained as:

...a way for girls and boys to confront the problems imposed upon them by hegemonic masculinity by creating within them an “emancipatory discourse” (Fairclough, 1992, p. 26) that would allow them freedom to pursue different identities and hopefully more personally fulfilling lives. (2003, p. 14)

Consequently, during the 1990s, critical literacy was integrated and written into many State and Territory primary, secondary and senior English curriculums across the country.

Critical literacy, as taught within the Australian English curriculum, is philosophically different from the ‘Freirean social inequities’ perspective. Australian critical literacy takes a literacy-based view, looking at language as a social construct, and as such, promotes the non-neutrality of language and texts. While analysing and critiquing relationships, social issues and power relationships reflect Freiran critical literacy, Australian critical literacy places additional focus on teaching students to understand *how* language works, and how hidden agendas and layers of meaning are constructed (Luke, 2000).

According to Luke (2000), the differences between Australian and other versions of critical literacy are due to the influence of Halliday’s (1994) Systemic Functional Grammar (SFG) model. The SFG model promotes language and grammar as representations of human evolution and interaction, specifically ‘traced to ideological representations (field), social relations (tenor), and textual formations (mode)’ (Luke, 2000, p. 453).

Practically, this translates into a classroom focus on talking about the technical characteristics, social functions, and contexts of texts. In other words, Australian approaches to critical literacy have developed a sophisticated metalanguage for students to use in developing understandings of control over lexicon, sentence-level grammar, and text genres – a metalanguage; that ties language to function, text to context, theme to ideology, and discourse to society and cultures. (Luke, 2000, p. 453)

In addition to construction and deconstruction of language features and structures of texts, Australian critical literacy also encompasses all forms of representation in texts.

At the heart of Australian critical literacy is a view of language and text as always operating within and on, for or against, the inequitable socio-political arrangements of society. Central to its work therefore is the scrutiny of the linguistic and visual forms of representation and the implicit or explicit struggle over meaning within the available signifying systems. (Morgan, 1997, p. 23)

Australian critical literacy promotes the construct of language as being bound to production, and how unequal power is propagated through the construct (Lankshire, 1997). It is through language that people are both informed and manipulated by texts. Language represents an individual's perceptions of identity, culture and ways of being. The dominant group within a society will be represented in the language displayed in texts of that society. Halliday (1985) viewed the relationship between language and power as pivotal in his functional linguistic theory. Texts present ideologies valued within a particular sociocultural context, and as such the worldviews of an author cannot be escaped (Bull & Anstey, 2002). All societies contain members who are powerless to speak or listened to, and society constructs behaviours and values that propagate these positions (Emmitt et al., 2009) through texts produced by that society.

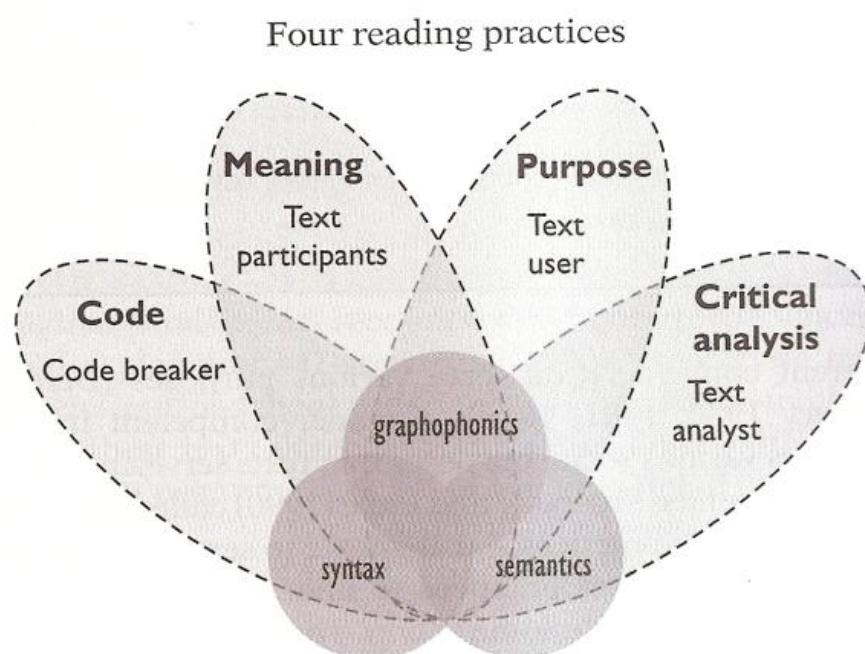


Figure 2.8. The Four Reading Practices (Harris, Turbill, Fitzsimmons & McKenzie, 2006, p. 35).

Australian critical literacy asks readers to comprehend at a deeper level (Luke & Freebody, 1999; McLaughlin & DeVoogd, 2004; Pearson, 2001). It is a reading practice and philosophy that specifically focuses on the social, political and historical contexts that influence the creation and comprehension of texts. Critical literacy theory, is also embedded within Freebody and Luke's (1990) Four Resource Model also known as the Four Reading Practices (see Figure 2.8) that encapsulates the multiple skills required by a competent reader in society today, as briefly discussed in section 2.3.4. Significantly for critical literacy pedagogy, the role of text analyst moves readers 'beyond the meanings they make from texts to consider what it is a text wants the reader to do, think or believe' (Harris et al., 2006, p. 196). Questions such as 'what is this text trying to do to me?' 'What does it want me to believe?' and 'Whose voices are silent?' reveal critical literacy ideology within the model.

2.3.4.1 *Third generational view*

As mentioned, some academics believe critical literacy, in its current embodiment in Australian classrooms, is a 'watered down version' of what it should be. Morgan (1997) explains this 'de-emphasis on praxis' as being attributed to a separation of time and place. She defines the work of Freire and his peers as constituting a *first generational view*, the analysis and application of this work within the Australian context by academics such as Lankshear, Freebody, Luke and others as the *second generation*, and finally the *third generation* of classroom practice.

I am not suggesting that such a line of inheritance condemns teachers in this country to a degenerate or attenuated version of the original purity of practice; rather, I acknowledge that this, like any discourse-practice, adapts to its ecological niche through forms of specialisation. (Morgan, 1997, p. 24)

2.3.4.2 *Curriculum and syllabus links*

The inclusion of critical literacy theory and practice within Australian literacy pedagogy is clearly reflected in the various mandatory curriculums at both state and national level. The current three Board of Studies NSW English syllabi (2003, 2007 & 2009) ranging from Early

Stage 1 through to Stage 6 host a number of outcomes that promote the teaching of critical literacy skills to students. For example, the opening page of the English K-6 Syllabus specifically refers to this relationship of theory and practice.

This involves students in questioning, challenging and evaluating the texts that they listen to, read and view. Critical literacy enables students to perceive how texts position readers to take a particular point of view of people and events. (2007, p. 5)

The Australian Curriculum: English, published in December 2011, is part of a national agenda to bring consistency of planning, teaching and assessing literacy practices to all Australian schools. Interwoven within the Literature Strand are elements of critical literacy specifically linking context, perspective and bias through understanding language. For example:

5.3 Literature: Understanding, appreciating, responding to, analysing and creating literature.

5.3.1 Encountering literary texts and creating their own will engage students partly because of what they might learn about human experience and what they might learn about how language has been used, and can be used by them, to create particular emotional, intellectual, or philosophical effects.

5.3.2 Studying literature helps shape personal, cultural and national identities. Studying past and present literature reveals the imaginative potential of the language, including how that relates to cinema, television, and multimedia. Engaging with literary texts is worthwhile in its own right, but, importantly, it is also valuable in developing the imaginative application of ideas, flexibility of thought, ethical and critical reflection, and motivation to learn.

From this baseline document the new NSW English K-10 Draft Syllabus (2011), currently in a consultation period, has been developed. From a design perspective, this syllabus is significantly different to past incarnations, reflecting a clearer philosophy of continuity from Kindergarten through to Year 10 and beyond. In this context, the expectation that critical literacy

practices will continue to be taught from Early Stage 1 through to Stage 5 is clear. For example, in the Rationale:

Through responding to and composing texts from Kindergarten to Year 10, students learn about the power, value and art of the English language for communication, knowledge and enjoyment. (p. 11)

They will be able to communicate their thoughts and feelings, to participate in society, to make informed decisions about personal and social issues, to analyse information and viewpoints ... and to think about the influence of culture on the meanings made with language. (p. 12)

While some changes may result from the consultative process, this document has been scheduled to become mandatory in New South Wales (NSW) schools in 2014. The next section explores some of the controversy that has dogged critical literacy pedagogy in this country over the past years.

2.4.4 Australia: The battlefield of critical literacy

Literacy, over the last 20 years, has been a political battleground.

Gibson, 2008, p.73

The evolution of critical literacy within the context of Australian education has often been described using the language of *war*, as some headlines suggest: ‘Literacy War is Reignited’ (*The Australian*, December 8, 2005b), ‘Reading the Riot Act’ (*The Australian*, September 5, 2007), ‘In defence of the true values of learning’ (*The Australian*, September 23, 2006) and ‘Cannon fodder of the culture wars’ (*The Australian*, 9 February 9, 2005a). Then, there are the ‘foot soldiers’ of the opposing ‘Houses’ such as Kevin Donnelly who describes himself as a ‘conservative education warrior’ (2005, online), and Murdoch Press journalists claiming they were ‘proud to have waged a campaign’ (*The Australian*, 2007, online) in defence of values education. These metaphors reflect the passionate and polarised views of educators, political and religious leaders and the media in this country, that have periodically burst into highly public debates since critical

literacy's introduction into the English curriculum in the 1980s (Freesmith, 2005). The last round was a particularly heated skirmish ignited by academic Wayne Sawyer's editorial in the 2004 December journal *English in Australia* in what he later claimed to be 'his personal response' to the re-election of the Howard government.

What does it mean for us and our ability to create a questioning, critical, ethical citizenry that that kind of deception is rewarded?

Has English failed not only to create critical generations, but also failed to create humane ones? (p. 3)

Does a critical literacy need to become more direct and deliberate in its ethics and its critical stance? (p. 8) (Sawyer, 2004)

Freesmith stated that Sawyer's editorial had connected 'the teaching of critical literacy with the promotion of a healthy democracy' (2005, p. 25), and so began a war of words that endured for over three years between the media, public leaders and literacy academics in this country.

On February 9, 2005, *The Australian* newspaper fired the first public shot with the headline 'You failed your voting test, kids, and teachers to blame' (online). As the first media response to Sawyer's 2004 editorial, the article validated its stance using *ammunition* from the then Education Minister Dr. Brendan Nelson:

It confirms in part what is held as the worst fears of parents that often teachers are seeking to impose their own particular views which they are perfectly entitled to have, but to impose those views on students. This person is doing a great disservice to English teachers generally and their representation. (p.1)

Passionate response and counter-response pursued, with both sides believing it was not a battle fought on equal terms. On September 5, 2007, The Australian newspaper [Editorial] printed a retaliatory article headed, 'Reading the Riot Act'.

It may surprise readers of *The Australian* to discover that they have been the victims of a campaign to create moral panic fomented by none other than this newspaper. According

to an article published in the International *Journal of Progressive Education* by Wayne Sawyer and Susanne Gannon, 55 articles this newspaper published about literacy between April 2004 and August last year were part of a “vituperative” media campaign to create moral panic and demonise the “whole-language approach” to teaching English. In fact, *The Australian* is proud to have waged a campaign not just for three years but two decades, going back to the 1980s, to bring back phonics and ensure that children learn how to read. (*The Australian*, online)

The debate wove a wobbly line of logic at times netting unrelated educational issues into the web of discourse between the two rival groups. Some of these issues included questioning the specific ‘job description’ of English teachers, accusations of indoctrinating children and the ‘dumbing-down’ of the curriculum (Slattery, 2005, p. 10). Meanwhile, pro-critical literacy advocates questioned the intelligence, political motivation and promotion of ‘conservative, Eurocentric and nationalistic agendas’ (Freeman, 2005, p. 4) of their ‘persecutors’. These distractions hijacked and confused the original issue of critical literacy being taught in Australian. Both sides claimed misinformation and manipulation by the ‘other side’. Conservatives believed critical literacy, often confusing it with postmodernism and relativism (Howie, cited by Betteridge 2005) was negatively influencing the morality of students. Even the Archbishop of Sydney, Cardinal George Pell in an interview with Lynn Bell on ABC Local Radio in 2005 suggested that English teachers were ‘brainwashing students’, distracting them ‘from the intrinsic beauty that’s in literature and … distort(ing) the study for narrow political purposes’ (online). Advocates, in turn counter-claimed that political and religious leaders who rejected critical literacy wanted an ‘indoctrinated’ society; ‘do you want a citizenship that is engaged and able to develop its own ideas, or do you want a society that has been indoctrinated? I think that is quite scary’ (Howie, cited in Betteridge, 2005, online).

The one aspect both sides agreed on was that political ideology was playing a major part in the debate. Arguments demonstrated that each side embedded their discussions based on the

ideological roots of critical literacy rather than the reality of how it was being taught in Australian schools.

Political ideology spurs critical literacy support or admonishment. For example, critical literacy first emerged in Australian classrooms when Labor governments were in political power federally and in many states. Consequently, debate about critical literacy flares when the Liberal / National parties are in government. In December 2005 Dr. Brendan Nelson MP, the Liberal Minister for Education, released the document ‘The National Inquiry into the Teaching of Literacy’. The report strongly referenced the need for ‘evidence-based approaches to the teaching of reading’ (2005, online), implying what was currently being taught in schools was lacking this aspect. The document paid tribute to phonics-based teaching and downplayed whole-language literacy approaches. The Federal government had taken a clear side in the ‘literacy wars’. And how does this relate to critical literacy? It demonstrates how literacy pedagogy, even in a country as stable and democratically driven as Australia, is inescapably politically managed and influenced.

Eventually, the rhetoric faded and little more has been heard in the media on this topic in recent years. Was there a winner in this war of words? Maybe so, if the current National Curriculum’s English syllabus is any indication.

2.4.5 Guiding Principles and Elements of Critical Literacy

Critical literacy views readers as active participants in the reading process and invites them to move beyond passively accepting the text’s message to question, examine, or dispute the power relations that exist between readers and authors. It focuses on issues of power and promotes reflection, transformation, and action.

McLaughlin & DeVoogd, 2004, p. 14

As discussed, critical literacy is a dynamic concept that is affected by social, cultural, economic and chronological contexts (Janks, 2010; Luke, 2000; Morgan, 1997; Menezes de Souza, 2007; Stevens & Bean, 2007), therefore, a strict regime of techniques or analytical tools are in essence, a contradiction of the concept. Kamler and Comber (1996) argue that critical

literacy cannot be contained within a generic set of procedures or methodology. Macedo (2000) wrote that creating a ‘method’ within which to frame Freirean dialogue is inconsistent with its philosophical stance. A similar dissatisfaction with ‘packaged approaches’ to critical literacy in schools has been proffered by McDaniel

The term ‘critical literacy’ is becoming more prevalent in educational environments, but a watered-down or packaged version with a prescribed set of activities is not true critical literacy. Of course, these texts may offer useful methods, but by their very nature, they are uncontextualized. In other words, the activities should emerge from the needs of the students, the particular situations and settings, the educational goals, and the possibilities inherent in the educational context. (2006, p. 21)

This highlights yet another difference between Freirean and Australian critical literacy, that being the interpretation of ‘context’.

Notions of students actively changing their life circumstances is not absent in Australian critical literacy; however, the contextual focus in building critical literacy skills is to develop these understandings through close study of texts and language, rather than solely focusing on the situational contexts of students, education or political systems. This is not to deny the existence of socio-economic, racial and cultural inequity within this country. On the contrary, it is through ‘real’ texts that teachers give students the focus, opportunity and knowledge to identify and question inequity. A rich variety of contextually diverse texts from around the world are promoted and encouraged by education departments and English syllabi, and drawn on by classroom English teachers. For senior students NSW Department of Education English resources recommend international texts with strong socio-cultural focuses such as Chinua Achebe’s ‘When Things Fall Apart’ (1958), ‘To Kill A Mockingbird’ by Harper Lee (1960), and plays such as ‘The Crucible’ by Arthur Miller (1952). These are taught alongside Australian texts such as ‘Rabbit-Proof Fence’ by Phillip Noyce (2002) and ‘Tales From a Suitcase’ by Davies and Bosco (2002). For younger students picture books can provide age-appropriate materials for this same

outcome, such as ‘The Rabbits’ (2000) by John Marsden and Shaun Tan, ‘The Island’ (2007) by Armin Greder and ‘Ziba Came on a Boat’ (2007) by Liz Lofthouse. These texts offer students the tools to discover how issues of power and bias across cultures, are communicated through the multifaceted construct of language and texts.

To enable the inclusion of critical literacy theory within a curriculum, educators require a practical and effective teaching / learning model. While purists may declare this perpetuates ‘watered-down’ versions of critical literacy, without such tools it is difficult to conceive how teachers could practically develop critical literacy skills with their students. McLaughlin and DeVoogd (2004) acknowledge that a ‘generic set of procedures’ is not in line with critical literacy ideology, but they highlight four principles they believe guide and enable critical literacy practice within educational contexts. These four principles reflect post-structuralist, sociocultural and post-modern theories of multiple perspectives, multiple truths, cultural and social capital of meaning making and perspective, marginalised views, authorial intent and relationships of power within texts and language.

- Critical literacy focuses on issues of power and promotes reflection, transformation, and action
- Critical literacy focuses on the problem and its complexity
- Critical literacy strategies are dynamic and adapt to the context in which they are used
- Critical literacy disrupts the commonplace by examining it from multiple perspectives(McLaughlin & DeVoogd, 2004, pp. 14-16)

Some authors have moved beyond the principles of critical literacy to define the construct through a number of *elements*. These elements enable educators to guide their students towards understanding and practising critical literacy in the classroom and beyond. These will be discussed in the following section.

2.4.5.1 Elements

It is one of the basic tenets of poststructuralist thinking about literature, as it was of reader-response theory, that there is no absolute single ‘true’ meaning of a text.

Mission and Morgan, 2006, p. xv

A number of authors have identified specific elements that contribute to enabling critical literacy as a pedagogical practice (Behrman, 2006; Cervetti, et al., 2001; Lohrey, 1998; McLaughlin & DeVoogd, 2004; Stevens & Bean, 2006; Walsh & Grant, 2002). Examples of these elements include:

- Text, context and purpose
- Roles, interaction and power
- Cultural contexts
- Alternative perspectives
- Values and beliefs
- Point of view
- Equity and privilege
- Authenticity
- Influences
- Authorial intent

Some of these elements are specifically identified in different Australian English curriculums.

For example, the current NSW 7-10 English syllabus explicitly states that students should be taught skills such as multiple reading perspectives, point of view, discourse, positioning, gaps and silences, agency and deconstruction to incorporate into their readings of texts (Morgan, 1997).

Another example is presented by the Tasmanian Education Department on their website, illustrated/summarised in Figure 2.9 below.

-
1. Examining meaning within text
 2. Considering the purpose for the text and the composer's motives
 3. Understanding that texts are not neutral, that they represent particular views, silence other points of view and influence people's ideas
 4. Questioning and challenging the ways in which texts have been constructed
 5. Analysing the power of language in contemporary society
 6. Emphasising multiple readings of texts. (Because people interpret texts in the light of their own beliefs and values, texts will have different meanings to different people.)
 7. Having students take a stance on issues.
 8. Providing students with opportunities to consider and clarify their own attitudes and values.
 9. Providing students with opportunities to take social action.
-

Figure 2.9.Tasmanian Education Department Elements of Critical Literacy (online).

2.4.5.2 Elements: questioning framework

A study conducted by Cynthia McDaniel and recounted in her book *Critical Literacy: A Way of Thinking, A Way of Life* (2006) investigated pre-service teachers' responses to children's literature and their current thinking about literature using a critical literacy framework. This framework was adapted from a previously similar study by Apol (1998, cited in McDaniel, 2006). McDaniel modified Apol's original ten questions by taking the 'main concept, collaps(ing) the overlapping concepts, and develop(ing) a set of questions against which to analyse each student's written response' (McDaniel, 2006, p. 89). This process is detailed in Appendix A.

Does the participant:

1. Show evidence of questioning the text (overarching question)?
2. Question power (dominance and submission)?
3. Address the text's unspoken, underlying message, such as influences of the author's values, contemporary culture and/or place?
4. Question the absences/gaps/silences in the text (what is missing) or what is represented as normal?

5. Identify similarities with other texts ('texts' in a broad sense, including popular culture)?
6. Consider the influences of his/her own experiences and/or culture when responding to the text? (McDaniel, 2006, p. 108)

The strength of McDaniel's questions lies in the clarity, open-endedness and succinct integration of most of the elements listed by previous authors. These questions not only reflect the tenets of Australian critical literacy practices, but are also based on sound theoretical underpinnings. They provide a strong question-based framework against which student understanding and performance of critical literacy skills can be determined.

2.4.6 Conclusion

Critical literacy is a type of forensic science applied to a literary text.

All texts breathe out, perceptively or imperceptibly, a point of view, a worldview.

Rosemary Ross Johnston

Critical literacy is currently an integral and important aspect of literacy teaching in Australian schools. In summary the current teaching practice of critical literacy in Australian schools involves focusing on issues of power and promotes reflection, transformation, and action; focusing on a problem and its complexity; teaching strategies that are dynamic and adapt to the context in which they are used; and finally teaching students how to disrupt the commonplace by examining it from multiple perspectives (McLaughlin & DeVoog, 2004).

However, it is only *one* element of literacy pedagogy in this country. The significance of this chapter has been to identify the evolution of critical literacy as theory and practice, some of the controversy that has pursued its steady growth as a pedagogical practice in this country, and the types of understandings it assumes to give students in understanding how texts work.

Irrespective of the concept's ideological roots, critical literacy requires students to comprehend texts and meaning at deeper levels.

2.5 Metacognition

There is nothing either good or bad, but thinking makes it so.

Shakespeare, *Hamlet*

Cogito, ergo sum.

Descartes, 1628

2.5.1 Introduction

Significantly for this present study, researchers have identified metacognition as an essential element of giftedness (Cheng, 1993; Alexander, et al., 2005; Carr & Taasoobshirazi, 2008; Gagné, 2008; Helms-Lorenz & Jacobse, 2008; Veenman, 2006, 2008) and reading proficiency (Baker, 1984, 1994, 2005; Borkowski, 1992; Brown, 1985, 1987; Griffith & Ruan, 2005; Pressley & Gaskins, 2006; Roe & Smith, 2012; Thomas & Barksdale-Ladd, 2000). However, “no existing literature specifically points out the connection between metacognition and critical literacy” (Griffith & Ruan, 2005), which, as stated in Chapter 1, is one of the major aims of this current study.

This section of Chapter Two overviews the historical perspectives of metacognition and the resulting lack of cohesion and consistency that have existed in the research field. It then reviews specific literature that directly relates to the core of this present study, that being the links between metacognition, reading and young students. Finally, an overview is made of popular metacognitive assessment tools that currently exist, and specifically the inadequacies of many of these for young children.

2.5.2 Metacognition and Giftedness

To know that one knows what one knows, and to know that one doesn't know what one doesn't know, there lies true wisdom.

Confucius (551 – 476 B.C.E.)

There have been limited studies examining the relationship between metacognition and gifted learning. It is logical to hypothesise a connection might exist between advanced learning capacity with metacognition and self-regulation. In the late 1990s research was struggling to

identify that gifted students had higher metacognition than average students (Alexander, et al., 1995; Carr, et al., 1996; Cheng, 1993; Hannah & Shore, 1995). Munro (n.d.) postulated that part of the problem might be that in only using IQ to identify giftedness, predators such as task commitment, strong knowledge base and social support were being ignored in the equation.

In 2008 Shaughnessy, Veenman and Kleyn-Kennedy produced a collection of more recent research investigating this phenomenon across the globe. The eleven articles in this collection summarised the small steps that have been made in research investigating the relationship between metacognition and giftedness. A reoccurring theme described by many of these authors was the difficulty experienced in finding these connections, with some suggesting that part of the difficulty is related to instrumentation. ‘Declarative knowledge is difficult to assess reliably, as children must verbally articulate what they know in a structured interview context. Limitations in verbal skills may be limiting our awareness of understandings children do have’ (Alexander et al., 2005, p. 78). McGaughey(2005) found that because gifted students ‘break patterns, not just follow them’ (p. 103) this in turn makes assessing pattern making in this population difficult to track.

Expertise focused in a number of studies in the attempt to classify giftedness and identify relationships with metacognition and found that ‘gifted children share many commonalities with experts’ (Carr & Taasoobshirazi, 2008, p. 119). For example Alexander et al. (2008) found that ‘expert knowledge in a particular domain allowed gifted students to make connections in novel situations within a related domain’ (p. 76). Carr and Taasoobshirazi (2008) reported a connection between domain specific strategies and expertise ‘gifted students show more expert and advanced strategy use’ than their peers (2008, p. 118). That study also found a connection and reciprocal relationship between metacognition and expertise:

Metacognition increases as an individual gains more knowledge and moves towards expertise. At the same time, metacognition supports the emergence of expertise. When working in a new domain, the ability to reflect on inconsistencies between what one

currently holds to be true and what evidence suggests to be true promotes better learning. Novices who possess better metacognitive skills, therefore, will move more quickly toward expertise. (p. 112)

Veenman (2008), reflecting on his own study came to the conclusion that ‘both intellectual and metacognitive abilities accounted for learning performance’ (p. 215). The results clearly identified ‘metacognitive skilfulness was significantly correlated to intellectual ability ... however, also uniquely accounted for a substantial proportion of variance in learning performance’ (p. 215). Veenman believes his study shows a clear connection between high levels of intelligence and metacognitive skills and that these work together ‘in speeding up the acquisition of expertise’ (p. 216). The study also showed that metacognitive skills ‘do not necessarily develop parallel to intellectual skills’ and that ‘intelligence only gives students a head start in metacognition’ (p. 215). Research has demonstrated how metacognitive skills can be taught (Baker, 1994; Pintrich, 2002; Pressley & Gaskins, 2006), yet ‘cognitive training aimed at raising the intelligence level’ has not produced consistent results to prove success (Sternberg, 1990). Veenman concludes that the relationship between these two constructs must continue to be researched and that ‘motivational factors, such as task interest, persistence, and self-efficacy may still co-vary with intellectual and metacognitive skills as determinants of giftedness’ (p. 216). As Carr and Taasoobshirazi (2008) state, ‘much more work needs to be done on the role of metacognition in the learning of gifted children’ (p. 119). The following sections focus on some of the historical and recent evolutionary understandings in the field of metacognition that are important for this current study.

2.5.3 Evolution

There are many different historical roots from which this area of inquiry developed.

Ann Brown, 1987, p. 66

Metacognition as a concept and research field has been described by authors using terms such as ‘complex’, ‘lacking coherence’, ‘vague’ and ‘fuzzy’ (Efklides, 2001; Perfect, 2002;

Hacker, 2008; Metcalf, 2008; Schraw, 2009; Tarricone, 2011; Veenman, Van Hout-Wolters & Afflerbach, 2006; Wilson, 1999; Winne, 2010). In recent years metacognition has become a focus for researchers working in neuroscience, psychology and education attempting to find links between theory and practice, which in itself is believed to be ‘an earmark of the maturity and substance of a scientific concept’ (Hacker, Dunlosky & Graesser, 1998, p. xiii). To some extent the lack of consistency can be explained by the search for understanding by different schools of knowledge utilising different ‘traditions of research inquiry’ (Veenman et al., 2006, p. 5). Perfect and Schwartz (2002) identified ‘two parallel roots, one in the emerging cognitive psychology of the 1960s and the other in the post-Piagetian developmental psychology of the 1970s’ (p. 2). There is, however, another field of scholarship that can claim an even longer association with this modern concept.

2.5.3.1 Philosophy

If ‘reflection is the quintessence of metacognition’ (Tarricone, 2011, p. 12) then the genesis of this construct can be traced back to Ancient Greece with the famous inscription at the Oracle of Apollo in Delphi Greece, ‘Know Thyself’. Others have traced the philosophical genealogy of reflection back to Socrates [469–399BC] who has been attributed with the quote ‘life without enquiry is not worth living’ (Dunlosky & Metcalfe, 2009; Perfect & Schwartz; 2002; Tarricone, 2011).

The language of ‘self’ can be found throughout the history of philosophical writings including Rene Descartes (1556–1650) quoted at the beginning of this section, suggesting he could not imagine any person not engaging in self-reflection (Metcalfe, 2000). Reflection of the self and introspection can also be found in early writings of Michel de Montaigne (1533-1592), Thomas Hobbes (1588-1679), John Locke (1632-1704), David Hume (1711-1776), and Auguste Comte (1798-1857) to name just a few. While the extensive writings on philosophy and reflection are beyond the parameters of this review, the point is made that metacognition has a significant historical pedigree that is often overlooked when describing it as a modern field of study.

With the focus of this current study being on metacognitive links within education, and more specifically the reading process, two major lineages or schools of psychology have contributed to this evolution and will be briefly discussed in the following two sections.

2.5.3.2 Cognitive psychology lineage

In the 1960s cognitive psychology research began its journey in metacognition through studies of accuracy in memory. Cognitive psychologists like Hart (1965 cited in Perfect & Schwartz, 2002) pursued research into adult cognition examining issues such as ‘feelings of knowing’ (FOK) and recall, today labelled as metamemory, and considered by this school as one component of metacognition. This line of research continued in the 1970s with the work of Tulving and Madigan (1970), and Nelson and Narens (1990) who developed a theoretical framework to support this theory. Significantly, most of the research by the cognitive psychology researchers, until recent times, had been with adults, when Cognitive Psychology and Developmental Psychology began to share tools and theories in the promotion of the field (Perfect & Schwartz, 2002, p. 3).

2.5.3.3 Developmental psychology lineage

Flavell, who originally trained as a clinical psychologist, later moved into developmental psychology with his interests in schizophrenic thinking. Today, he states he was strongly influenced by Piaget and Chomsky (cited in Shaughnessy, 2008, p. 221) in his early fieldwork, which led to one of his most notable contributions to the field, namely coining the term ‘metacognition’. Unlike the cognitive psychologists, developmental psychology focused on studying metacognition in children. Flavell’s early research examined how memory develops in children from their earliest years. Another developmental psychologist Ann Brown (1978) focused on understanding the knowledge and control children had over their memory processes which led her to investigating links between metacognition and comprehension in reading (Tarricone, 2011).

It is beyond the scope of this present study to investigate the extensive contributions and research completed within each of these three schools of thought as they have led to our current understandings of metacognition. They are briefly presented to suggest how and why multiple understandings co-exist and have evolved, and why unitary definitions and philosophical standings remain complicated.

2.5.4 Attempts to define metacognition

Metacognition has been labelled as ‘a buzzword’, ‘ill-defined’, ‘obscure’, ‘fuzzy’, ‘vague’, ‘faddish’, ‘messy’, ‘a many headed monster’ and an ‘epiphenomenon’.

Tarricone, 2011, p. 3

While metacognition as a concept did not begin with John Flavell’s 1979 publication *Metacognition and Cognitive Monitoring: A New Area of Cognitive-Developmental Inquiry*, this seminal piece is extensively acknowledged as the birth of the term *metacognition* (Dunlosky & Metcalf, 2009; Griffith & Ruan, 2005; Hacker, Dunlosky & Graesser, 1998; Helms-Lorenz & Jacobse, 2005; Jausovec, 2008). The following section will briefly review Flavell’s definition of metacognition.

2.5.4.1 John Hurley Flavell (1928-)

As a developmental psychologist Flavell built on the work of Jean Piaget researching ‘theory of mind’ (TOM) in children. In 1971 he labelled the management, monitoring and retrieval of memory as ‘metamemory’. Flavell (1979) believed the process of cognition was enabled through the “interactions of four classes of phenomena: (a) *metacognitive knowledge*, (b) *metacognitive experiences*, (c) *goals (or tasks)*, and (d) *actions (or strategies)*” (p. 906). The interaction of these four phenomena can be seen in Flavell’s (1981) design model shown in Figure 2.10. Flavell described metacognitive knowledge as the accumulated experiences of world knowledge held by an individual and can be either declarative ‘knowing that’ or procedural ‘knowing how’ (Papaleontiou-Louca, 2008). Three variables impact on metacognitive knowledge, that being *person*, *task* and *strategy* (Flavell, 1979, p. 907) and will be discussed in

more detail in section 2.5.6.7. A succinct representation of Flavell's cognitive monitoring model was designed by Tarricone (2011) and is presented in Figure 2.10.

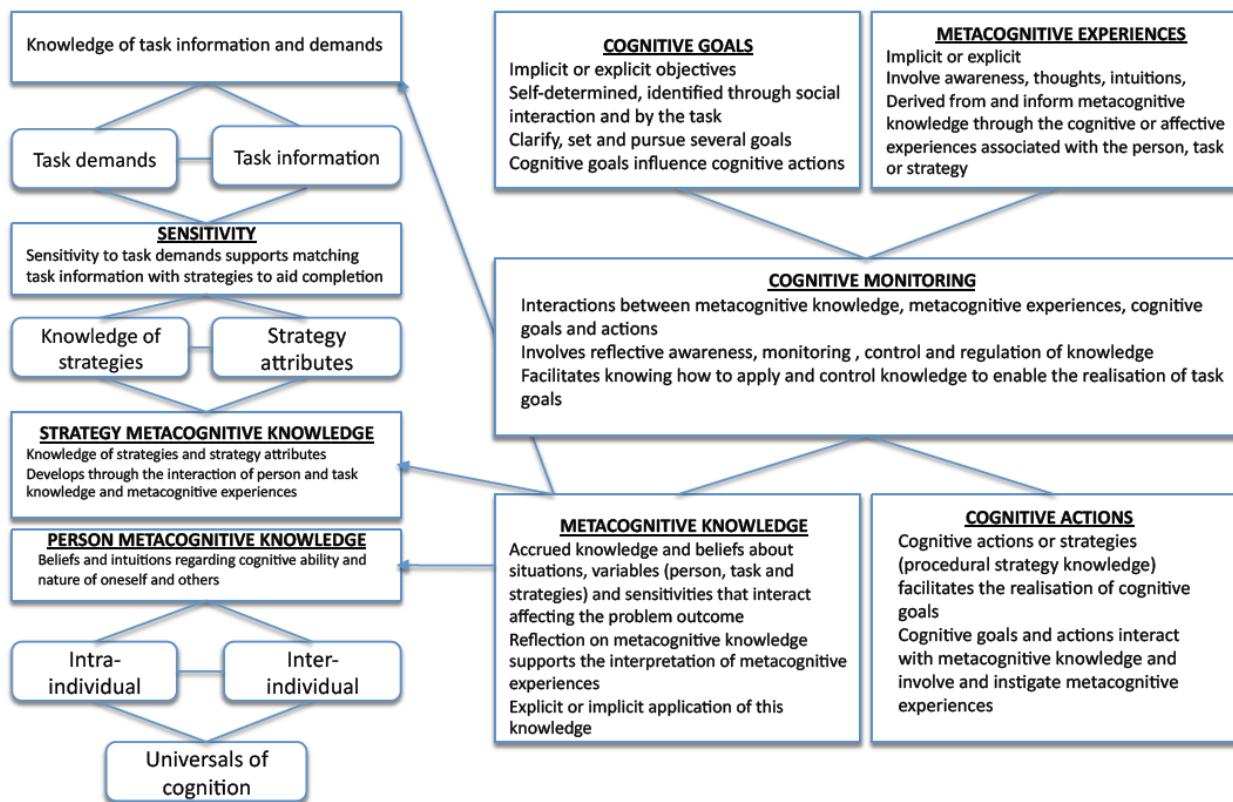


Figure 2.10. Tarricone's Amplification of Flavell's cognitive monitoring in the conceptual framework of metacognition (2011, p. 135).

The choice of Flavell's label of *metacognition* has been problematic since its original inception, as first highlighted by Brown (as cited in Tarricone, 2011, p. 3). 'Meta', the Greek stem used in English prefixes, signifies 'beyond' or 'focusing on' the core aspect of the category being described. For example, *metalinguage* is the language used to describe language. Therefore, *metacognition* has been literally defined as 'knowledge about cognition' and explains some of the overly simplistic definitions that have since resulted, such as 'thinking about thinking' that continues to be used. Brown first highlighted and explained how and why the term 'metacognition' causes difficulties for researchers and others.

2.5.4.2 Ann L. Brown (1942-1999)

As an educational psychologist, much of Brown's work focused on how children learn, specifically their active memory. Significantly for classroom teachers, Brown is attributed with developing the popular reading approach of 'reciprocal teaching', and the beginnings of 'inquiry learning' as part of the Fostering Community of Learners program in which students design their own learning within a curriculum framework. Brown is also credited with making the first links between metacognition and reading skills, and specifically her work with metacomprehension that will be expanded on in section 2.5.7. Her work has been claimed as the building blocks upon which research in this field continues (Baker, 2005; Cromley & Azevedo, 2006; Griffith & Ruan, 2005; Israel, 2007; Pressley & Gaskins, 2006). Brown first highlighted that the term 'metacognition' was inadequate and confusing.

Two primary problems with the term are: it is difficult to distinguish between what is meta and what is cognitive; and there are many different historical roots from which this area of inquiry developed. The confusion that follows the use of a single term for a multifaceted problem is the inevitable outcome of mixing metaphors. (as cited in Tarricone, 2011, p. 3)

In line with her own research into the role of metacognition in reading, Brown redefined metacognition, which continues to be quoted in reading literature today (Baker, 2005; Griffith & Ruan, 2005; Israel, 2007; Roe & Smith, 2012).

Flavell (1978) defined metacognition as 'knowledge that takes as its object or regulates any aspect of any cognitive endeavour.' Two (not necessarily independent) clusters of activities are included in that statement: knowledge about cognition and regulation of cognition... The first cluster is concerned with a person's knowledge about his or her own cognitive resources and the compatibility between the person as a learner and the learning situation... The second cluster ... consists of the self-regulatory mechanisms used by an

active learner during an ongoing attempt to solve problems. (Baker & Brown, 1984, p. 353)

2.5.5 Inconsistency in the Field

Inconsistency marks the conceptualization of the concept.

Veenman, 2006

A number of reasons have been identified, beyond the evolutionary past of metacognition, as to why thirty years of research has failed to stamp consistency on this research field. Brown has not been the only voice of concern regarding the label of ‘metacognition’. Wilson (1999, online) argued that the term *metacognition* is used in ‘vague, confusing, and often contradictory’ ways and the term is sometimes used to describe a range of disparate higher-level cognitive skills. Tarricone’s (2011) extensive review of the research found there has been ‘colloquial, hackneyed and often misuse of the term, resulting in studies that fail to identify clearly specific elements of metacognition, or which theoretical position they are based upon’ (p. 4). Tarricone also believes part of the problem has been as a result of Flavell’s development of the construct based on metamemory theory:

These problems include the question of whether executive memory processes are part of metamemory, as well as knowledge of memory and secondly what roles these executive processes play in memory performance, how they interact with knowledge of memory and whether these processes are implicit or explicit or a combination. (p. 3)

More troubling is the claim that much of the confusion in this research field has been the result of poor research practice. Kaplan (2008) recapped an extensive review of the literature by Dunsmore, Alexander and Loughlin (2008) finding:

[There exists] a rather troubling prevalence of practices by researchers, neglecting to define the concepts under investigation, misidentifying concepts, misaligning definitions of concepts with methods of operationalization, and employing instruments without reflection on their theoretical roots and methodological limitations. Such practices would

be problematic in any domain of inquiry and should be avoided. (Kaplan, 2008, p. 477)

Veenman, Van Hout-Wolters and Afflerbach (2006) state there has been ‘a proliferation of metacognitive terms … unfold(ing) through the years’ (Veenman et al., 2006, p. 3). These terms include, but are not limited to: feelings-of-knowing (FOK), metamemory, meta-learning, metacomponents, metacognitive skilfulness, metacognitive awareness, meta-strategic thinking metacomprehension, metalanguage, meta-attention, higher-order thinking skills, self-regulation, self-regulated learning, to declarative, procedural and conditional knowledge. With this ‘proliferation’ of terms have come multiple models and diagrams by authors attempting to make this invisible concept, visible.

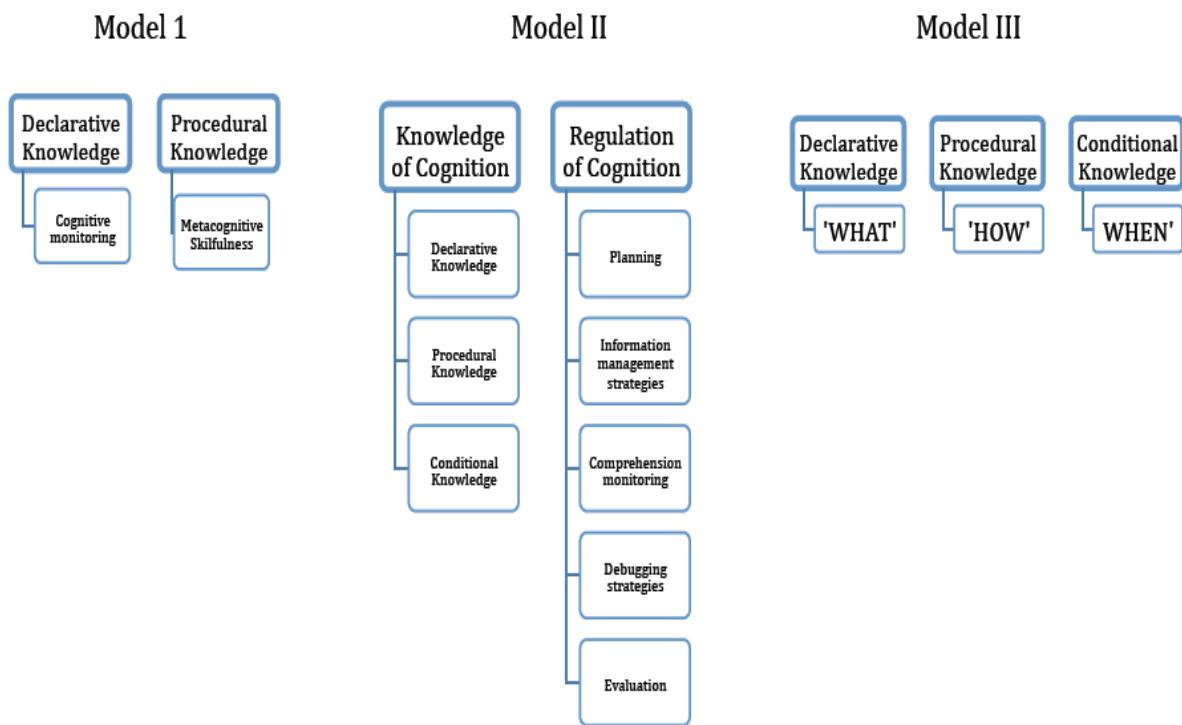


Figure 2.11. Overview of three scaffolds adopted by recent metacognitive models and researchers.

When examining the many models that have been presented over the years this lack of consistency is clear. For example, there has been disagreement identifying elements, categories and sub-domains within the field. The literature primarily offers one of three general models as

shown in Figure 2.11. Model I shows a minimal delineation two factor model i.e. knowledge of cognition and regulation or control of cognition(Brown, 1978, 1981, 1984; Flavell, 1979; Griffith & Ruan, 2005; Paris, 1990a; Pintrich, 2002; Son & Schwartz, 2002; Winn, 1996).

Model II presents an eight sub-domain model that expands on the three factor model and includes 1) declarative knowledge 2) procedural knowledge 3) conditional knowledge 4) planning 5) information management strategies 6) monitoring 7) debugging strategies and 8) evaluation of learning (Artzt & Armour–Thomas, 1992; Schraw & Dennison, 1994).Finally Model III shows a three sub-domain model that includes 1) declarative knowledge 2) procedural knowledge 3) conditional knowledge (Alexander et al., 1995; McCormick, 2003; Schraw, 2009). Kaplan (2008) believes part of the confusion can be attributed to the practice of researchers inconsistently defining specific constructs. For example, some studies have adopted the term ‘declarative knowledge’ as a primary domain, as shown in Model I (Figure 2.11) (Helms-Lorenz, 2008; Veenman, 2008), while others have relegated the term ‘declarative knowledge’ as a sub-domain of Knowledge of Cognition - Model II (Magno, 2010; Schraw & Dennison, 1994).A similar situation exists with the term ‘Conditional Knowledge’, which also appears to have multiple meanings depending on the research team. For example, Model III reflects this term as a primary domain (Larkin, 2010; Schraw, 1998; Schraw & Moshman, 1995), and others categorise it as a sub-domains as in Model II. It should be noted that Figure 2.11 only includes a cross-section of some recent models found in current literature, and other combinations and models do exist.

2.5.6 A Taxonomy and Conceptual Framework of Metacognition

In her book *The Taxonomy of Metacognition* Pina Tarricone (2011) published her Doctoral dissertation that presented an extensive review of the literature and theories in the field that in turn led to the development of a conceptual framework and taxonomy of metacognition. Professor David Moshman, a renowned researcher deemed the work to be ‘an unrivalled overview of the concept of metacognition, and will remain thereafter the definitive record of how

psychologists thought about metacognition in the opening decade of the twenty-first century' (p. xv). A strength of Tarricone's work, and why this taxonomy has been adopted by this study, lies in the amalgamation of the many categories and elements proposed by previous authors. The taxonomy offers clear and concise links between cognitive and developmental psychology models and has been claimed to be a valuable framework for educational research (Moshman, 2011, p. xv). While the taxonomy itself is designed to be interactive and non-hierarchical, the Conceptual Framework presented in Figure 2.12 on which the taxonomy has been built, shows a hierarchical listing of various elements and components.

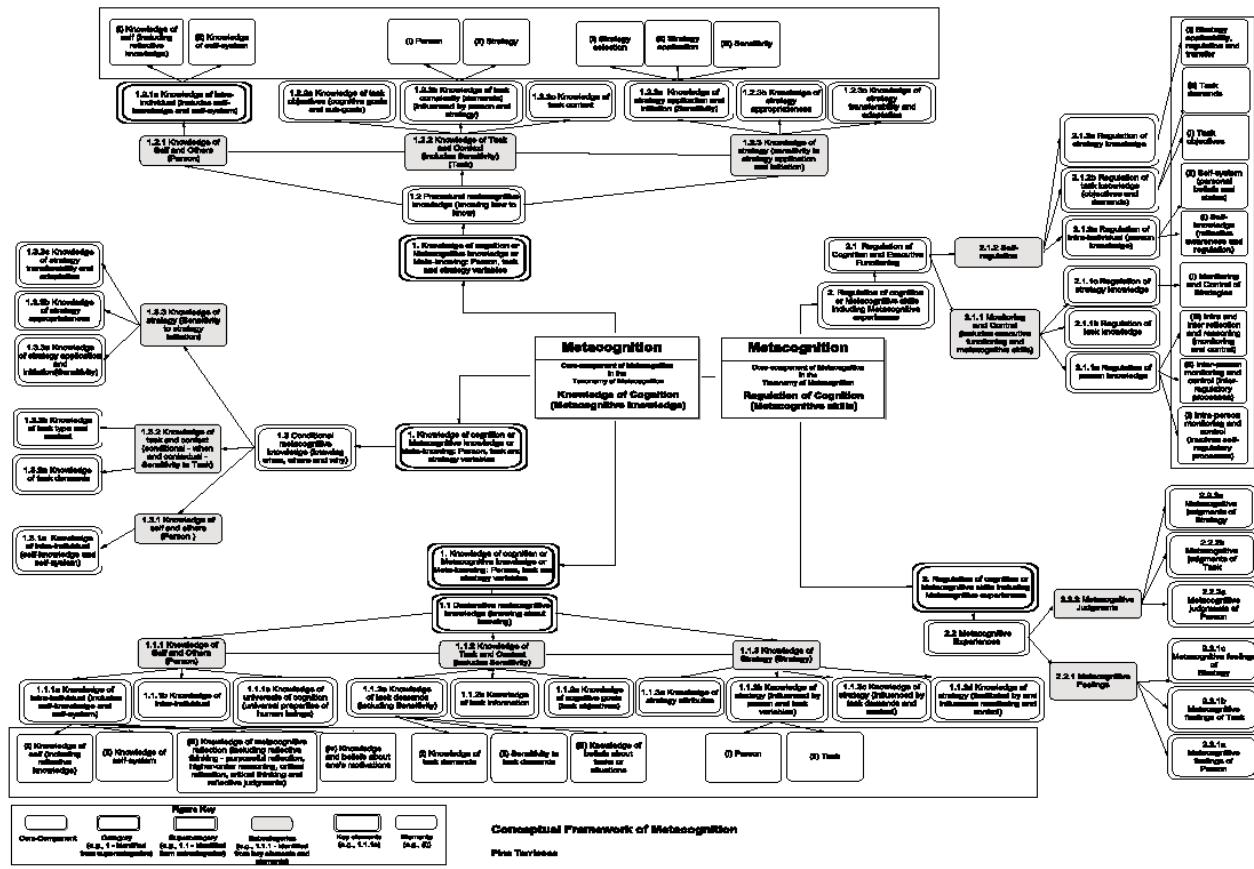


Figure 2.12. Tarricone's 2011 Conceptual Framework of Metacognition (see Appendix B)

The conceptual framework is divided into the core-components of metacognition, that being 'knowledge of cognition' or *knowing about* one's own cognitive processes, and 'regulation of cognition' involving the *use* of one's own cognitive processes (Brown, 1978; Dunlosky & Metcalf, 2009; Larkin, 2010; Israel et al., 2005; Pressley, Borkowski & O'Sullivan, 1984;

Veenman et al., 2005). The framework then connects the related components, subcomponents, categories, supercategories, subcategories and key elements of metacognition as summarised in Figure 2.13 below.

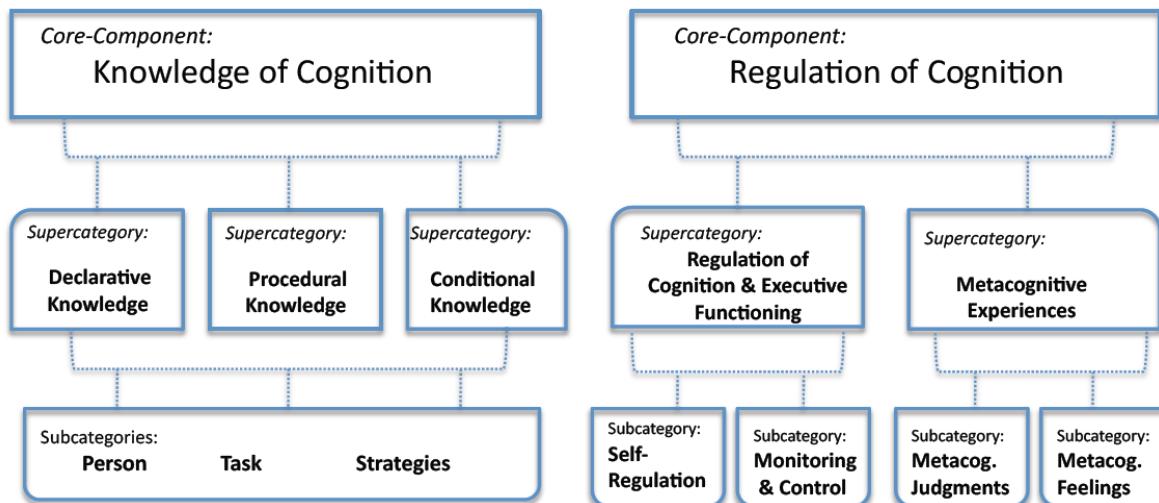


Figure 2.13. Adaptation of Tarricone's subcomponents, categories, supercategories, subcategories and key elements of metacognition as presented in the conceptual framework.

2.5.6.1 Core-Component: Knowledge of Cognition

Also known as *Self-Knowledge* (Baker & Brown, 1984; Brown, 1985) or *metacognitive knowledge*, this core-component represents the understanding of one's own, and others' cognitive interactions and abilities, including how the mind works and the domain-specific strategies used during the completion of a task (Baker, 2002; Ruan, 2004; Flavell, 1979; Helms-Lorenz et al., 2008; Paris, 1987; Pintrich et al., 2000; Veenman, Kok, & Blote, 2005). It is considered a higher-order function requiring reflective skills of self-awareness, self-appraisal and reflection to judge one's ability and knowledge (Tarricone, 2011).

This knowledge:

- can be implicit or explicit
- requires rich semantic knowledge
- assists in recall and the reconstruction of information
- is influenced by developmental, learning and task experiences
- is essential for memory development and
- requires inferential reasoning and judgement. (Tarricone, 2011, p. 197)

This core-component is comprised of the three supercategories of *declarative* (knowing that), *procedural* (knowing how) and *conditional* (knowing when, where and why) *knowledge*. Figure 2.14 reflects this structure with the subcategories, or as Flavell labelled ‘variables’ (person, task and strategy), that impact the effectiveness, or realisation of the supercategories.

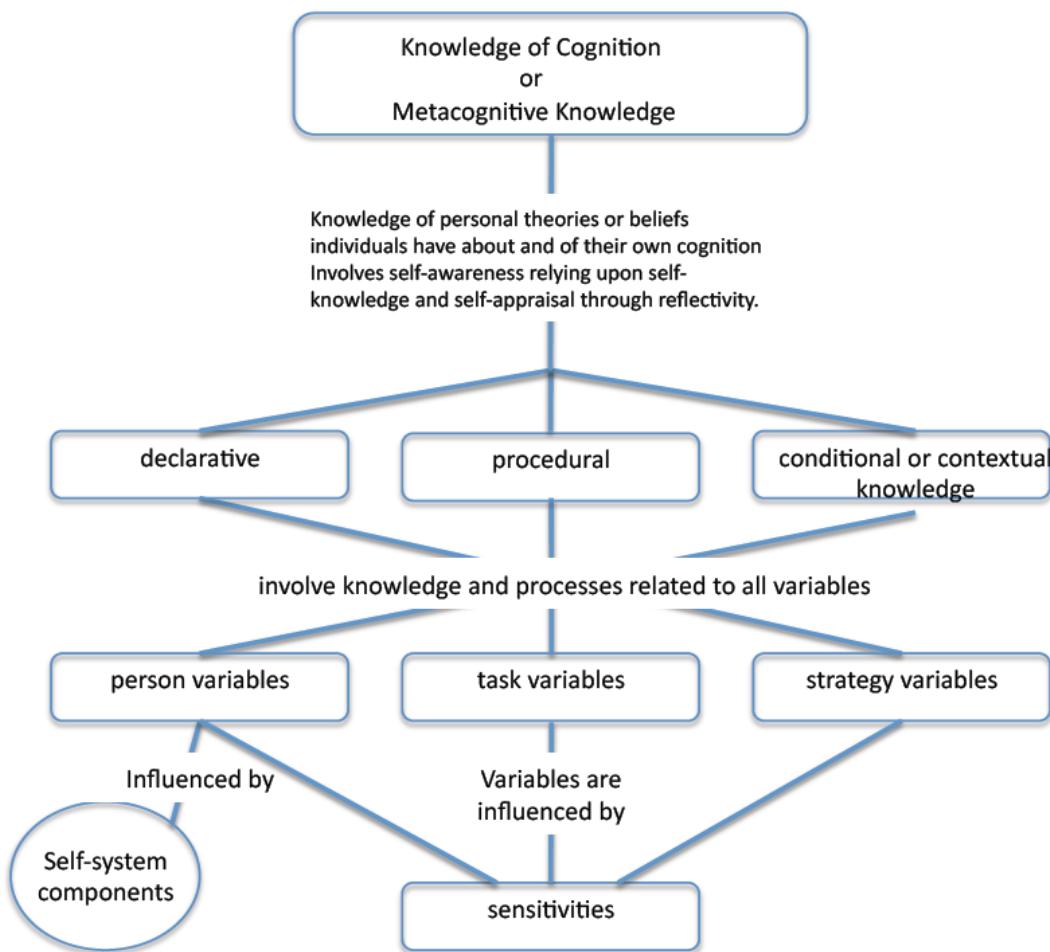


Figure 2.14. Tarricone's (2011) amplification of core-component Knowledge of Cognition.

Based on her extensive review of the literature Tarricone designed the taxonomy to reflect the major points of the conceptual framework. As these amplifications summarise the tenants of the Core, Super- and Sub-categories and are important for this current study, they are included in detail in Appendix B.

2.5.6.2 Supercategory: declarative metacognitive knowledge

Declarative knowledge has been described as ‘stable and statable’ (Brown, 1987; Griffith & Ruan, 2005; Helms-Lorenz & Jacobse, 2008; Tarricone, 2011) although it is also acknowledged as being unreliable, as ‘facts known about cognition can be incorrect’ (Tarricone, 2011, p. 157). Paris, Lipson and Wixon (1994) described declarative knowledge as the ‘that’, ‘how’, ‘when’ and ‘why’ of metacognition and this will be expanded further with regards to reading practices in section 2.5.8. Tarricone’s amplification of declarative knowledge is presented in Appendix B and the related assertions for declarative knowledge in Appendix B.

2.5.6.3 Supercategory: procedural metacognitive knowledge

Also recognised as *Strategic Knowledge* is ‘*knowing how*’ to do things, or the strategies and skills needed to complete tasks. Griffith and Ruan (2005), echoing the work of Baker and Brown, believe these skills are not necessarily stable, and are difficult for young children (p. 7). Procedural knowledge involves an understanding of the strategies one uses during the completion of a task and is considered an essential tool in effective problem solving (Baker and Brown, 1984; Chi, Feltovich, & Glaser, 1980; Larkin, 2010; Ruan, 2004). Procedural knowledge includes planning, monitoring, checking, evaluating and revising (Baker & Brown, 1984) which is also a significant part of the second core-component of Regulation of Cognition (RoC). Appendix B shows how the three variables or subcategories work within the Supercategory of Procedural Knowledge. Tarricone’s assertions for procedural metacognitive knowledge are included in Appendix B.

2.5.6.4 Supercategory: conditional metacognitive knowledge

Conditional Metacognitive knowledge is not a separate category within Brown’s modelling of metacognition in reading; however, researchers such as Paris (1987), Schraw (1998, 2001), McCormack (2003), Harris (2009) and Tarricone (2011) do include it. Appendix B shows Tarricone’s amplification of this Supercategory and its various elements, including the three

variables. Tarricone's assertions for conditional metacognitive knowledge are included in Appendix B.

2.5.6.5 Core-component: regulation of cognition

The second Core-Component, also known as *Metacognitive Control* or Regulation of Cognition (RoC) (see Figure 2.15), directly involves monitoring, regulating and control of one's cognition and learning. In contrast to Knowledge of Cognition, Regulation of Cognition is the actual use of those strategies (Pintrich, 2002). There are clear links between this Core-component and the sub component of Procedural Knowledge, however, knowing about how to monitor and control cognition is not the same as actually performing these skills. The question could be asked, if one exhibits monitoring and control, without necessarily being aware, does this mean they 'have' this knowledge? This is an important question when working with young children.

Tarricone's assertions for Regulation of Cognition are presented in Appendix B.

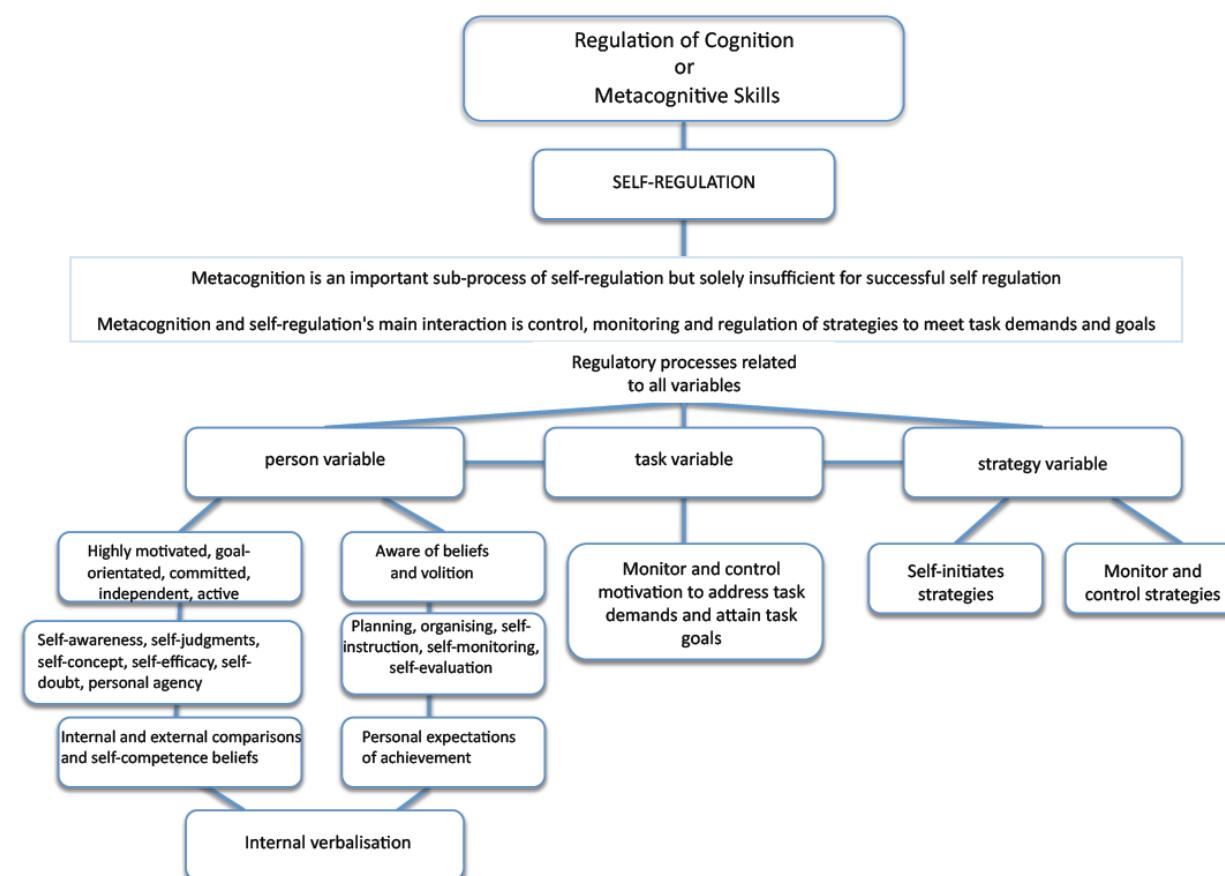


Figure 2.15. Tarricone's (2011) amplification of core-component Regulation of Cognition.

2.5.6.6 Supercategory: regulation of cognitive - metacognitive experiences

The first category within the core-component of RoC is metacognitive skills that include metacognitive experiences. These are broken down into two further categories of monitoring and control (including executive functioning and metacognitive skills) and self-regulation. Monitoring and control includes the frontal lobe/executive functioning involved in goal setting, control planning, regulation and organisation of information, monitoring clarity and accuracy. They are modifiable and adaptable and stimulated by past control experiences (Tarricone, 2011, p. 208).

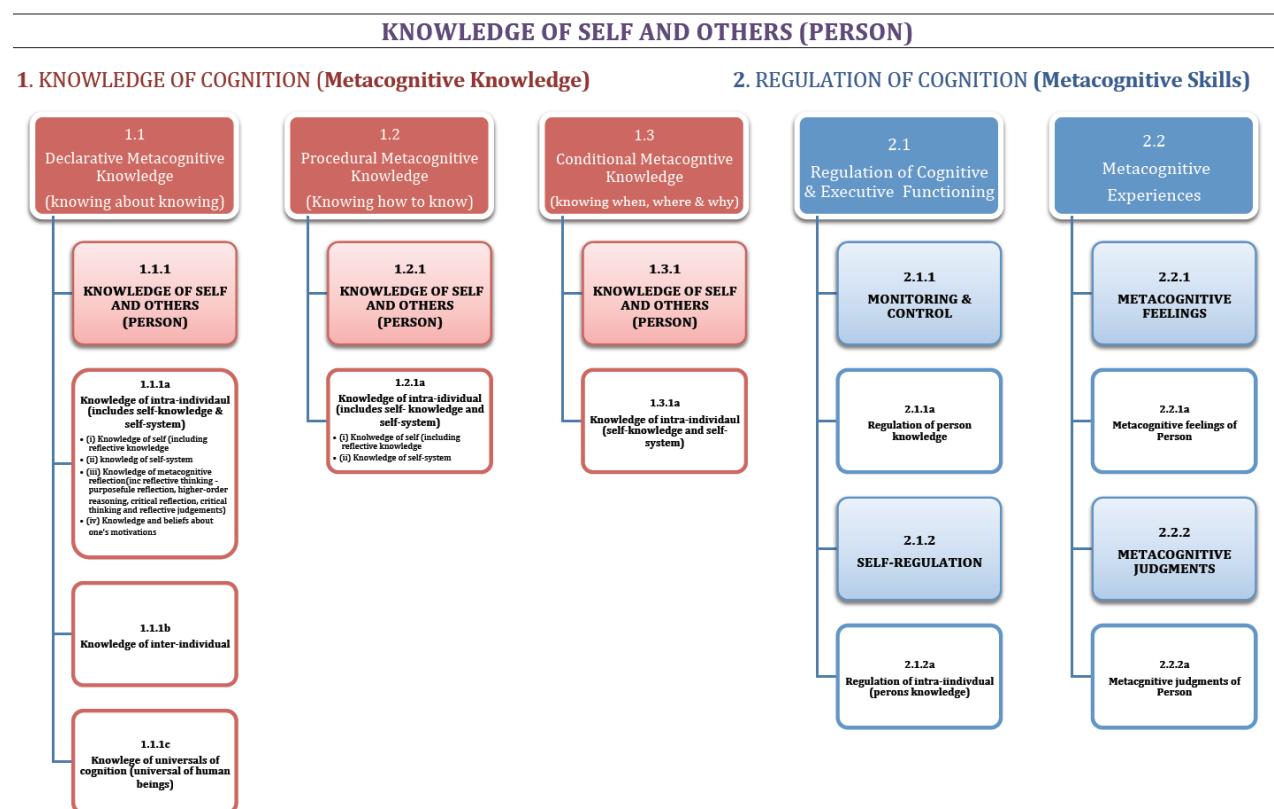
A reversal of the hierarchy of sorts is evident with the inclusion of self-regulation in the taxonomy. While self-regulation also involves control and monitoring it is important to note that it is self-regulation that influences the metacognitive process rather than the other way around. Tarricone highlights this relationship in assertion 9.34 ‘metacognition is an important subprocess of self-regulation but solely insufficient for successful self-regulation’ (p. 169). Tarricone also notes that there are many self-regulatory factors shared by metacognition, ‘such as self-knowledge and self-systems and their components’ (p. 208).

2.5.6.7 Variables

Flavell (1979) identified three types of knowledge variables that span across each of the metacognitive components, that being knowledge of person, task and strategy. Tarricone (2011) labelled these three variables ‘subcategories’ within her conceptual framework and taxonomy. Knowledge of self and others (KoP) includes understandings and knowledge about one’s own cognitive abilities ‘intra-individual’, and others’ abilities ‘inter-individual’. These understandings require skills of comparison and judgement and include ‘beliefs and intuitions, understandings, misunderstandings, perceptions and conceptions regarding abilities, properties and processes of oneself and others’ (p. 158). Pintrich (2002) discusses how these skills allow or hinder students facilitating their own learning:

If for example a student realises that she does not know very much about a particular topic, she might pay more attention to the topic while reading and use different strategies to make sure she understands the topic being studied... Students who lack knowledge of their own strengths and weaknesses will be less likely to adapt to different situations and regulate their own learning in them. (p. 6)

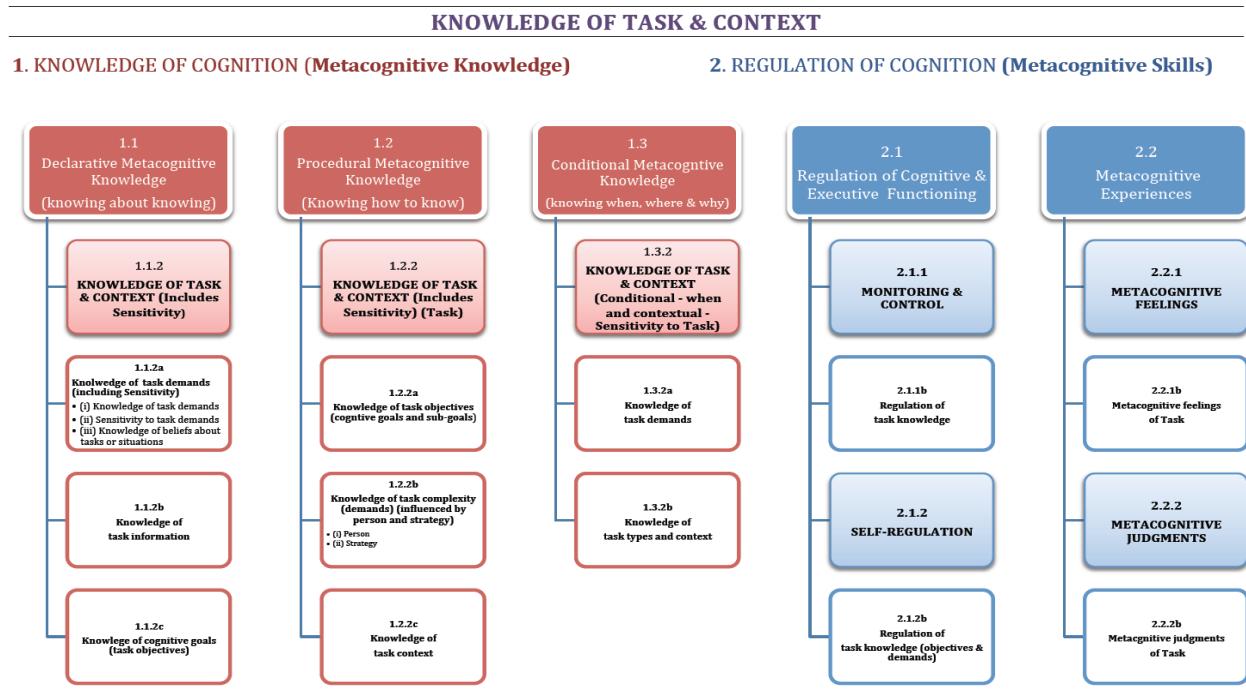
Each of Tarricone's Core-Components and their Super and Sub-components are influenced by KoP as demonstrated in Figure 2.16.



Adapted from Tarricone, P. (2011) Taxonomy of Metacognition

Figure 2.16. Variable 1: Knowledge of Self and others (KoP) adapted from Tarricone 2011.

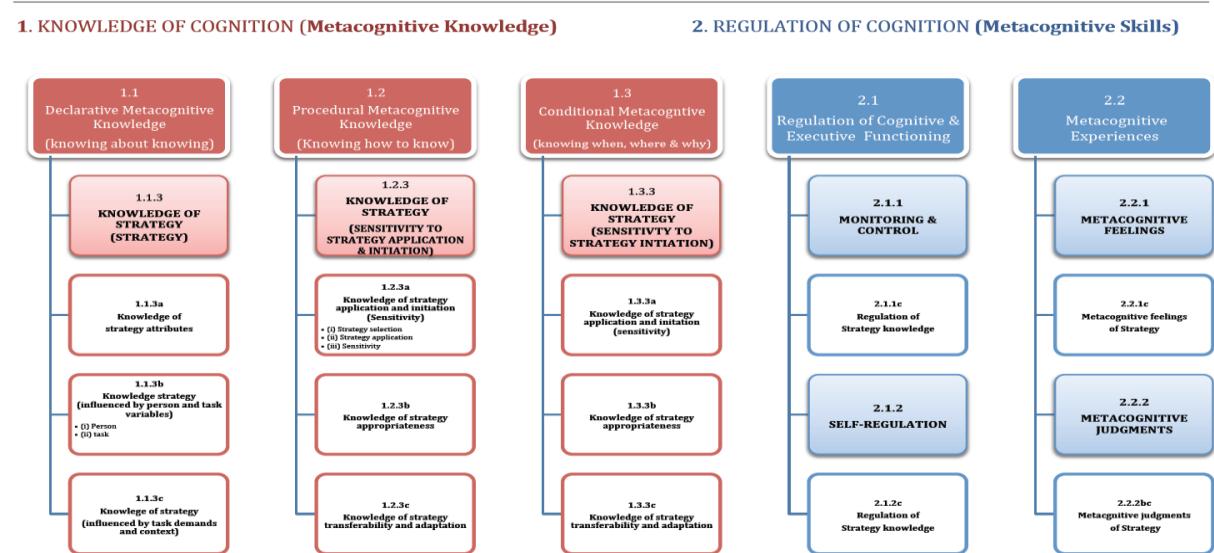
The second variable, Knowledge of Tasks (KoT) includes the demands of tasks, context and sensitivity to requirements and goals. Within each of the Core-Components, and Super components this variable places different demands and requires similar skills and understandings. These have been summarised in Figure 2.17.



Adapted from Tarricone, P. (2011) Taxonomy of Metacognition

Figure 2.17. Variable 2. Knowledge of Tasks (KoT) adapted from Tarricone 2011.

The third variable, Knowledge of Strategy (KoS) requires a ‘level of sensitivity to the task itself and the identification of appropriate and applicable strategies’ (Tarricone, 2011, p. 163). How the Super and Sub-categories are influenced by this variable are highlighted in Figure 2.18.



Adapted from Tarricone, P. (2011) Taxonomy of Metacognition

Figure 2.18. Variable 3. Knowledge of Strategies (KoS) adapted from Tarricone 2011.

2.5.7 Moderators of Metacognition

Much has been written about how knowledge and regulation of metacognition is influenced by certain moderators such as age, motivation, goal setting, epistemic beliefs, interests and intelligence. These will be briefly acknowledged and discussed in the following sections.

2.5.7.1 Age

Age is considered an influential moderator of metacognition. With regards to reading and comprehension, the belief that metacognition is ‘considered to be a late-developing skill’ (Griffith & Ruan, 2005, p.8) has already been stated. However, age is just one component of the developmental process that gradually develops from childhood into adulthood, and ‘it cannot simply be asserted that a child “has” or “does not have” metacognitive knowledge or control’ (Baker, 2005, p.63).

In 1992, Flavell related metacognition to Piaget’s developmental stage of formal-operational thinking (Veenman et al. 2008), and that children before this stage would not be capable of metacognition ‘young children’s egocentrism prevents them from being able to introspect or treat their own thought processes as an object of thought’ (Flavell, 1992, p. 118, cited in Veenman, Wilhelm & Beishuizen, 2004, p. 94). This idea that metacognitive skilfulness only develops to a significant level during the later years of school, and for most, not until university years (Baker, 2005; Griffith & Ruan, 2005) is one that has caused some debate in recent years. A question stemming from Baker’s observations might be that if metacognitive skilfulness is a late-developing skill in children, does this also apply to gifted and talented students? Do students who are more academically and intellectually advanced also fall into this framework? Or are cognitively able children already deploying metacognitive skilfulness on a daily basis?

2.5.7.2 Intelligence

There have been a number of studies about the roll intelligence plays in moderating metacognitive ability. Alexander, Carr and Schwanenfugel (1995) and Veenman, Wilhelm and

Beishuizen (2004), examined three theories that attempt to explain the relationship between intelligence and metacognition. The first theory states that metacognition relates directly to intelligence and as such will continue to remain constant throughout a child's development. That is, children with high intelligence will have more sophisticated metacognition, and this will be maintained throughout one's life.

This theory regards metacognitive skilfulness as a manifestation of intellectual ability, or as an integral part of the intellectual toolbox. According to this intelligence model, metacognitive skills cannot have a predictive value for learning, independent of intellectual ability. (Veenman et al., 2004, p. 91)

The second model regards metacognitive ability and intellectual ability as entirely separate entities, sighting low correlations between performance on intelligence tests, such as WISC-R, and metacognitive performance. Three studies that support this theory were reviewed by Veenman et al., in which they found two of the studies flawed in data collection or methodology.

The third model is a mixture of the first two models, that is, there is some correlation between intellectual ability and metacognitive skills; however, 'it also has a surplus value on top of intellectual ability for the prediction of learning' (Veenman et al., 2004, p. 92). Not all research within this field falls neatly into these three models, however, Veenman et al. (2004) believes it is the mixed model theory that appears to be favourably supported by research.

The age-related increase of metacognition, however, is not exclusively determined by intellectual growth. It appears that metacognition develops partly independent of intelligence, albeit to a limited extent. Metacognitive development is associated with, but not intrinsically part of the maturing cognitive toolbox. (p. 105)

2.5.7.3 Metacognition and giftedness

Some researchers have made attempts to find connections between metacognition and giftedness. For example, Alexander, Carr and Schwanenflugel (1995) reflect on Cheng's (1993) argument that there exists an 'unequivocal close relationship between metacognition and

giftedness' (cited in Alexander et al., 1995, p. 2). Alexander et al. also quote Shore (1986) that 'metacognitive research will lead us to a new meaning of giftedness in cognitive and academic terms' (p. 27). After two decades this still has not been realised. Alexander et al., go on to make several assumptions regarding gifted children and metacognition. One assumption supported by other researchers declares gifted children develop metacognitive skills faster than 'non-gifted' as a result of advanced information processing that they believe has been enriched by parents (Borkowski & Kurtz, 1987; Borkowski & Peck, 1986). As a consequence these children enter school with 'more' metacognitive knowledge than their age peers. These authors also note that while both intelligence and information processing theories predict advanced metacognition in gifted students, how this ability develops has been hypothesised but not empirically investigated. Alexander et al. (1995, pp. 4-5) presented three theories that link intelligence to metacognitive ability. In summary:

- i. *Ceiling Hypothesis* based on the theory that metacognition is a basic skill that reaches asymptotic level with development. Gifted children might develop this skill faster than nongifted and then, as nongifted children caught up, giftedness effects would diminish over time.
- ii. *Acceleration Hypothesis* in which skilled metacognitive abilities may be the hallmark of only the best and brightest. It relies on basic components needing to be laid down before truly gifted performance can be attained.
- iii. *Monotonic development* where gifted children maintain their superiority in this area throughout the lifespan.

'Of course, if differences in metacognitive ability are not noted at any age as a function of giftedness, then no separate theory is needed regarding the distinct development of metacognition in gifted children' (Alexander et al., 1995, p. 5).

More recently a number of authors have continued the search for connections between metacognition and giftedness (Carr & Taasoobshirazi, 2009; Cornoldi, 2010; Shore, 2000;

Snyder, Nietfeld, Linnenbrink-Garcia, 2011; Veenman, 2009). A reoccurring issue is the measuring of metacognition and the need for ‘calibration accuracy’ (Snyder et al., 2011, p. 193). With measurement limitations acknowledged, recent research continues to identify strong evidence in the differences between how gifted and typical learners utilise metacognition when attending tasks and activities. Snyder et al. note that while gifted students do not always complete tasks more quickly than typical students, they do spend more time at the planning stage (p. 189). They also found gifted students to be less impulsive compared with typical students, hypothesising this may be due to past successes that in turn reinforce epistemic and motivational beliefs, which will be discussed in the next sections.

Veenman (2009), continues to encourage research in the field of metacognition, and recently established the Springer Journal series ‘Metacognition and Learning’ devoted entirely to current research in this field. Veenman supports the hypothesis that both intelligence and metacognitive skills are necessary for the development or acquisition of expertise; however, ‘metacognitive skills do not necessarily develop parallel to intellectual skills. Intelligence only gives students a head start in metacognition, but it does not further affect its developmental course’ (p. 216).

Coronoldi’s (2010) recent research casts a shadow on previous held beliefs that life experiences, culture and educational efforts influence the development of metacognition. Coronoldi supports the belief that intelligence is affected by the three variables of culture, experience and metacognition, and that metacognition is the ‘most critical variable as it affects the core components of intelligence’ (p. 274).

The current literature on metacognition and giftedness is still in its infancy. Researchers continue to be frustrated in their attempts to quantify these connections due to contextual and situational aspects by investigating different core learning areas, such as science, mathematics, and literacy, as well as limitations with instrumentation. Research in this area is also complicated

by the many variables that have been identified as influencing metacognition. Some of these variables will be discussed in the following sections.

2.5.7.3.1 Sternberg's componential theory of intellectual giftedness and metacognition.

Sternberg's (1981) componential theory of intellectual giftedness identifies a number of strong links between metacognitive ability and intellectual giftedness. The theory identifies six metacomponents employed by gifted students that allow for the successful completion of tasks. These include recognising the nature and demands of a task; knowing the necessary steps required to perform the task; selecting an effective strategy that will allow for successful completion of the task; having the necessary understandings and domain-specific knowledge that will enable task completion; can allocate their limited resources competently to meet the demands of the task; and monitor their progress using fix-up strategies as necessary (Chan, 1999). There appears to be a close correlation between Sternberg's metacomponents and some of Tarricone's (2011) assertions. Some comparisons have been collated in Table 2.2 below.

Table 2.2

Comparison of Sternberg's (1981) componential theory of intellectual giftedness and Tarricone's (2011) taxonomy of metacognition assertions

Sternberg's (1981) Componential theory of intellectual giftedness (cited in Chan, 1999, p. 15)	Tarricone's (2011) Taxonomy of metacognition assertions (pp. 156-181)	
1. Gifted individuals are better able to recognise the nature and demands of the task to be performed	9.13	Knowledge of task and context including sensitivity to task is categorised as the task subcategory of declarative knowledge or task metacognitive knowledge [DK-T]
	9.27	Relying upon declarative and procedural knowledge, conditional knowledge determines why, when and where to use this knowledge (especially strategy knowledge) [CK]

2. Once the nature of the task is recognised, they are better able to generate or retrieve from long-term memory the necessary steps for performing the task	9.22	The self-system influences strategy selection and monitoring of strategy application and facilitates understanding the importance of strategy knowledge especially in complex, novel problems. [PK-P]
	9.29	Conditional knowledge supports the adaptive application and transfer of strategies in unfamiliar, complex problems and contexts [CK-T]
3. They are more capable of organising these steps in to proper sequence, selecting an effective strategy for successful execution of the task	9.15	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving [DK-S]
	9.26	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [PK-S]
4. Gifted students are more likely to have a larger variety of and more effective representations for information that facilitate task completion.	9.24	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [PK-T]
	9.7	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (beliefs about thinking or propositional manner) [DK]
5. Gifted students are more competent at allocating their limited resources to aspects of the task that count.	9.10	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts [DK-P]
	9.31	Context and contextual conditions influence strategy use, transfer and regulation
6. Gifted students are extremely capable of monitoring progress in task completion and are able to keep track of how well their plan is doing, and if it fails, are able to identify what went wrong and to revise the plan accordingly.	9.16	Monitoring and control facilitate the development of strategy knowledge, specifically their selection, application and revision in different task contexts. [DK-S]
	9.18	Strategy knowledge supports regulation such as planning, monitoring and control. [DK-S]
	9.33	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge [RoC]
	9.40	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals

DK – Declarative Knowledge; PK - Procedural Knowledge; CK – Conditional Knowledge; S – Strategy; T – Task; P – Person; RoC – Regulation of Cognition.

It is unclear if Sternberg has gone on to draw links between his componential theory and metacognitive theory; however, the above comparison suggests not only is there strong evidence that gifted students use metacognitive processes in their successful execution of tasks, but by comparing Sternberg's theory with Tarricone's Taxonomy some insight is gained as to how these metacognitive processes might be employed to enable this success.

2.5.7.4. Motivational factors

Research across a number of fields has clearly shown motivation to be pivotal in influencing learning as Winn and Nesbit (2010) revealed in their review of the literature.

Covington (2000) divided the field into two sectors grounded in Kelly's (1955) distinction between (a) motives as drives, 'an internal state, need or condition that implies individuals toward action' (p. 173) and (b) motives as goals, where 'actions are given meaning, direction, and purpose by the goals that individuals seek out, and ... the quality and intensity of behaviour will change as these goals change' (p. 174). As Covington noted, this distinction can be arbitrary because the same behaviour can be conceived as reflecting both forms. (p. 659)

For talented readers, motivating factors have been identified in their desire to read, and described in terms such as 'avid', 'enthusiastic' and 'voracious readers' (Kaplan, 1999; Halsted, 1990; Collins & Aiex 1990; Reis, 2008). Without motivation, readers are not inclined to self-correct and self-regulate their learning (Samuels et al. 2005, p. 47). But how does motivation impact or modify metacognition?

Wolters (2003) speculates that 'strategies for regulating motivation and strategies for regulating cognition are closely related and may be used in conjunction with one another' (p.182). Schreiber (2005) highlights the need for future research into the interactive nature of personal agency, motivation and metacognition. Being conducted primarily in the field of cognitive neuropsychology, this work is also still in its infancy.

2.5.7.5 Achievement goals

Achievement goals is a term used to describe what ‘learners orient to when learning’ (Winne & Nesbit, 2009, p. 659). There is still some way to go in the research in this area, the question still exists ‘whether achievement goals shape or constrain activities learners choose as they strive for goals’ (Winne & Nesbit, 2009, p. 259). The field is complicated due to the multidimensional and inconsistent nature of learners and the limited research to date, which has only investigated goal orientations, and the acknowledgement of the instability of goals in any individual (Dowson, McInerney & Nelson, 2006).

However, achievement goals theory may provide some insight into the mindset of young talented readers. For example, both theories of *mastery approach goals* and *performance approach goals* offer logical insights when considering young talented readers.

Students holding mastery approach goals, defined as intentions to deeply and thoroughly comprehend a subject, may judge that a situation affords opportunity to substantially extend expertise. In contrast, learners with performance approach goals may classify that the same situation (as an observer determines sameness) as offering excellent chances to prove competence to others. (Wynn & Nesbit, 2009, p. 659)

2.5.7.6 Interests

In psychological terms interest plays a positive part in how well a learner interacts within a particular environment (Winne, 2010), and interest has been proffered as another moderator of metacognitive skilfulness. For some time the influence of positive or negative feedback has been accepted as pivotal to the extent and levels of interest exhibited by individuals (Krapp, 2005; Dewey, 1913). There have been several variables identified which contribute to, and affect interest. Some of these variables include prior interest, prior knowledge and the specific structure of the domain of knowledge being attempted (Lawless, 2006; Randler, 2007). The positive interaction of these variables contributes to higher achievement (Winne et al., 2009, p. 660). A positive self-concept of ability and a perceived need for cognition has a direct influence on

interest and mediates achievement (Dai, 2007; Denissen, 2007). Winne and Nesbit (2010) state that interest dynamically interacts in complex ways with other variables that mediate the effects of interest and interest itself (p. 660). Some of these variables include self-monitoring and regulation, which clearly reflect a relationship with metacognition. However, while researchers have suggested an existing relationship, empirical validation of how or even if this is a valid moderator of metacognition, is yet to be achieved.

2.5.7.7 Epistemic beliefs

Epistemic beliefs are the perceptions and understandings of an individual's beliefs about knowledge. Kitchener (2002) highlighted a difference between *epistemic* and *epistemological*, the former referring to personal beliefs, and the latter referring to 'beliefs about the study of knowledge'. For the purpose of this research study, it is acknowledged, 'all empirical evidence indicates that epistemic beliefs and learning are closely intertwined but the nature of this relationship is still unclear' (Mason & Bromme, 2010, p. 2).

Research has demonstrated a relationship between epistemic beliefs, metacognitive skilfulness and reading comprehension. For example, Ryan's 1984 study showed that epistemic beliefs moderated comprehension of text, and students with flexible and highly developed epistemic beliefs also had higher levels of recall, problem solving skills and learning success than their peers. However, it cannot be assumed that highly able readers will necessarily automatically perform at a higher level, as the following quote by Mason and Bromme (2010, p. 2) demonstrates.

Several studies indicate that gaining more knowledge sometimes results in less sophisticated beliefs (Koller et al., 2000; Redish et al., 1998). Kienhues et al. (2008) found that increased knowledge in a specific topic could 'provoke less advanced epistemic beliefs.'

Epistemic beliefs have been shown to produce results inconsistent with abilities. Negative epistemic attitudes to a particular activity can override ability, producing poor interaction or

contributions. For example, a young highly able reader is given a picture book to analyse and fails to take the activity seriously and performs at a minimal level.

Research into the connections between metacognition and epistemic beliefs is ongoing. An area under investigation is how epistemic understanding influences the purposeful regulation and monitoring of cognition.

While research continues in each of these areas, as Winne and Nesbit (2010) state, tenacious connections exist between epistemic beliefs, motivation, interest and goals as moderators and influences of metacognitive skilfulness.

2.5.8 Metacognition, Self-Regulation and Comprehension

To know that one knows what one knows, and to know that one doesn't know what one doesn't know, there lies true wisdom.

Confucius (551-479 B.C.E.)

This section returns the discussion to the topic of reading from a metacognitive perspective. Tenacious connections have been established between metacognition, reading and comprehension by researchers (Baker & Brown, 1984; Larkin, 2010; Israel, 2005; Ruan & Griffin 2005; Duffy, 2005). Metacognitive knowledge and regulation are key elements in the reading process.

Since effective readers must have some awareness and control of the cognitive activities they engage in as they read, most characterisations of reading include skills and activities that involve metacognition (Baker & Brown 1984, p. 354).

2.5.8.1 Reading & metacognition

Since the early work of Brown in identifying metacognition as an essential element of the reading process, there have been a number of models developed over the years. In 1983 Armbruster identified several convergent aspects of defining metacognition in relation to reading and are summarised as:

1. Identifying and problem-solving ambiguous or confusing words or text and how these impact comprehension (problem-solving).
2. Awareness that one is both reading and comprehending successfully, or not (self-regulation).
3. Knowing how to remedy reading or comprehension difficulties (fix-up).
4. Understanding the purpose of a reading task and adjusting one's reading strategies and expectations accordingly (predicting, visualising, searching).
5. Awareness of strengths and weaknesses in the reading process.
6. Drawing on past experiences to assist comprehension and understanding of a text.

Paris, Wasik and Turner (1991) designed a checklist of the characteristics of a skilled reader that focused on the three stages of reading. Each stage highlights the cognitive processes required of skilled readers:

Preparing to Read

- Is clear about the goals for reading
- Skims the text to get information about the length and structure of the text
- Activates prior knowledge

Constructing Meaning While Reading

- Reads selectively, reading quickly irrelevant information or rereading important, difficult or interesting text
- Identifies main ideas
- Predicts
- Makes inferences
- Interprets and evaluates
- Integrates ideas into a coherent representation of the text
- Monitors understanding

Reviewing and Reflecting on Reading

- Self-questions for understanding
- Invokes strategies to review the text and comprehension
- Summarizes
- Continues to process the text based on reading goals (p. 612).

Significantly, this list appears to be a foundation for the metacognitive self-reporting instruments Metacognitive Awareness of Reading Strategies Inventory (MARSI) by Mokhtari and Reichard (2002), and the Metacomprehension Strategy Index (MSI) by Cassidy-Schmitt (1990). Cassidy-Schmitt and Sha (2009) also designed a list of characteristics that make direct links between successful reading processes and metacognitive self-regulation, stating that:

Effective reading requires: (a) problem solving on the run with selective use of available strategies; (b) self-monitoring of comprehension and consonance or dissonance between or among information sources; (c) evaluation of the effectiveness of the processing and the interpretation of the message; (d) a possible shift in strategies; and (e) continued monitoring until an acceptable plausible interpretation of the content and/or agreement among message sources is achieved. (p. 254)

2.5.8.2 Comprehension and metacognition

Numerous definitions attempt to describe the essential element of reading known as *comprehension*. For example, ‘if meaning resides in the text, then comprehension involves summarising and recalling what is stated in the text’ (Randi, Grigorenko & Sternberg, 2005, p. 21). The problem with this definition is that it does not account for the cognitive processing necessary for the act to be successful. Comprehension does not simply involve the act of recalling and summarising information, but also requires one to draw on personal schemata, and understandings of the world and texts within which the information can be processed and accessed. Even the following definition from a text written for classroom teachers, while offering a broader understanding of this multifaceted construct, does not fully acknowledge the multiple cognitive processes required for successful comprehension: ‘Comprehension involves the abilities to explain, interpret apply, have perspective, empathise, and have self-knowledge’ (Roe & Smith, 2012, p. 259). Hacker (2009), exploring comprehension from a metacognitive approach, which is sometimes known as a comprehension monitoring perspective (see Figure 2.19), in this researcher’s opinion, appears to offer a more effective definition:

Comprehension is the process through which understanding is derived through the construction of an internal representation of a text. It is a process that occurs in parallel at several levels, with a special kind of text representation being associated with each level and with the outputs of each level interacting in important ways. (p. 170)

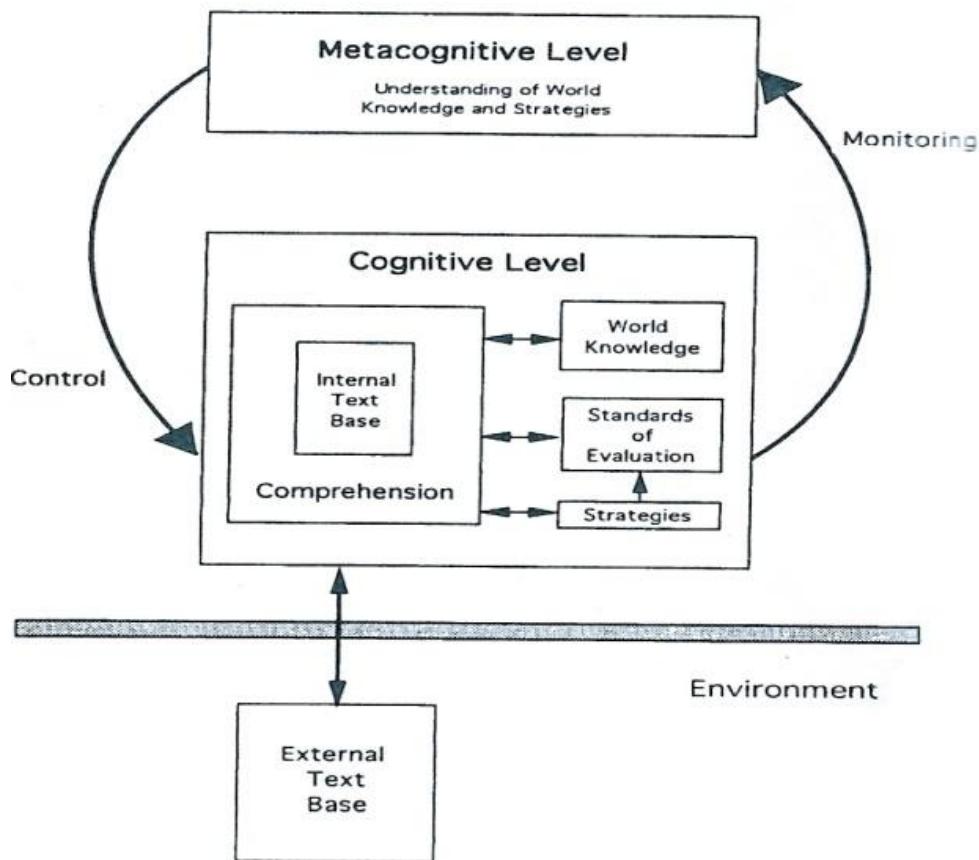


Figure 2.19. Hacker's Theoretical Mechanisms of Comprehensive Monitoring

Hacker's model encompasses the multiple levels of comprehension monitoring. First, there are words, phrases, sentences and paragraphs or syntactic units. The second level has these units moving into semantic units called text propositions that are 'stored in memory as interrelated chunks of text information forming a representation of the text that can form or modify the reader's world knowledge' (p. 170). The final level consists of the overall understanding or 'gist' of the text that can modify the previous levels already or yet to be, constructed. The external text base is represented 'internally within the comprehension process through constructive processing of the external text' (p. 171) and is therefore linked by a double-headed arrow.

Hacker (2009) argues that, ‘as a person reads a text and constructs an internal representation of it at a cognitive level, any part of that representation can be compared to a model at a related metacognitive level’ and this is determined by ‘the reader’s implicit or explicit application of … standards of evaluation’ (p. 172). Constructing meaning during reading requires a reader to interpret what is being read, which involves evaluative and regulative processes. Evaluation during reading ‘involves monitoring of one’s understanding of text material, and regulation involves control of one’s reading’ (p. 165). If readers are utilising both of these processes, they will be aware if there is a lack of coherence and ‘constructed meaning fails to fit with their developing interpretations of the text’ (p. 166). This understanding of comprehension is often labelled metacomprehension in some literature.

Brown (1978, 1981) first coined the term metacomprehension to describe ‘clusters of metacognition, knowledge of cognition and regulation of cognition’ (Tarricone, 2011, p. 134). Hacker (2009) states that currently cognitive psychologists prefer terms like ‘metamemory for text, calibration of comprehension or metacomprehension’ (p. 165), while educational psychologists favour the terminology ‘comprehension monitoring’. The following quote encapsulates many of the issues presented in section 2.5.6 *Moderators of Metacognition* within the construct of comprehension.

Current researchers of metacognitive processes in reading comprehension take a constructivist approach and recognize the importance of motivation, self-efficacy and collaboration among students … Directly, or indirectly, they also address students’ beliefs about learning, including the source of knowledge, and whether students’ believe they can influence their own learning.(Baker & Beall, 2008, p. 379)

2.5.8.3 Talented readers, metacognition and automaticity

Automaticity has been shown to play a major role in developing effective reading strategies and is generally the product of highly efficient and internalised actions.

Theory suggests it takes two forms. One that is not age reliant and which does not require any cognitive effort and a secondary form where some conscious behaviour becomes automated over time, with age and practice. This second form is problematic for theories of metacognition because a cognitive act which was once included in the metacognitive repertoire may become automated and unavailable to consciousness. (Larkin, 2010, p. 6)

There are many skills fluent readers perform automatically with little or no concentrated attention. Samuels, Ediger, Willcutt and Palumbo (2005) explored the roles of interest, attention, distraction, insight, attitudes and beliefs and overcoming obstacles in both reading and metacognition, and how these components work together to develop a level of automaticity in a learner. The importance of selecting challenging tasks that enable skills that might otherwise be automatic is clear because ‘once learners become competent in skills and strategies, it is not so easy to focus on or observe the processes being utilised by these learners’ (Samuels et al., 2005, p. 57). This is an important consideration for the present study in which we are attempting to observe and measure metacognitive skilfulness during reading tasks. The assumption here is that highly able readers have either greater access to, or better developed metacognitive skillfulness than their age peers who are not reading at the same advanced levels; however, empirical evidence is yet to prove this. Part of the difficulty of assessing metacognition in children has been focused on the current testing tools available to researchers, which will be discussed further in

2.5.8 Measuring Metacognition.

2.5.9 Measuring Metacognition

Methodology within the field of metacognition has diversified as research has moved away from descriptive studies to more experimental approaches (Hacker, 2009). Recent trends in experimental studies in developmental psychology circles include focusing specifically on cognitive monitoring, or regulation of thinking and research into the combinations of both, and this does not include the work within the cognitive psychology or neuroscience fields. Much of this work includes self-reporting measures including retrospective and concurrent verbal reports,

written reports, and self-estimates (Gay, 2002).

Reviewers of the literature and research into metacognition, including Schraw (2009a), also complain about the lack of understanding amongst some quarters in choosing measurement tools and the types of results that are being sort:

I recommend that researchers use multiple outcome measures whenever possible. Some outcome measures have become popular through conventional usage even when they are not the best measurement choices. ... Using multiple outcome measures would inform one's findings to the fullest extent possible, as well as foster an emerging pool of data that could be used in future meta-analyses to address broader comparative questions about the appropriateness and distributional suitability of each measure. (Schraw, 2009, pp. 41–42)

Schraw's cliché message of having 'the right tool for the right job' goes hand in glove with the need for careful consideration of what is being measured, for 'it is not the case that one measure is best in all situations' (Scraw, 2009b, p. 415). As mentioned, past inconsistencies of results have been attributed to the use of unsuitable instruments.

2.5.9.1 Instruments for measuring metacognition

As mentioned, there currently exists a number of instruments that reflect the experimental nature and 'vagueness' of much of the research into metacognition. For the purpose of the current study this section will look specifically at some of the favoured instruments currently used in research with children, i.e. surveys and self-report inventories.

While surveys and self-report inventories can be designed to focus on specific reading behaviours (Israel, 2007) there are some notorious difficulties with tests requiring reflectivity in children, whether during or post task. For example, Brown and Baker (1984) first noted the unstable and age dependent issues of regulatory skills. Retrospective discussions about skills used are memory-based. Questioning that occurs during tasks, risk fabrication due to a desire in young participants to please the assessor (Gay, 2002; Hacker, 2009). Recently, concerns have been raised about the validity of self-reporting, particularly with regards to reading strategies and skills

(Baker & Cerro, 2000; Hadwin, Winne, Stockly, Nesbit & Woszczyna, 2001). For example, the findings from these studies show that responses are “highly context-, task-, and goal-dependent” (Hadwin et al., 2001). Another issue with written tests is that there is no guarantee that “test performance reflects knowledge gained during reading” (Magliano & Millis, 2003, p. 252).

While surveys and inventories may be classroom and large-group friendly, offering analysis of specific skills of students for teachers (Israel, 2007), they are dependent on age and experience, and therefore limited with younger participants. An example of two such instruments follows.

2.5.9.2 MARSI & MSI

The Metacognitive Awareness of Reading Strategies Inventory (Marsi) is a thirty item self-report measure that assesses student awareness of reading strategies created by Mokhtari and Reichard (2002). This instrument has been adapted by authors like Israel (2007) for classroom teachers: ‘the MARSI can be used to understand what students think about and what reading processes occur when they read academic or informational texts’ (p. 63). Israel believes this to be a very useful tool for teachers giving them the information for identifying specific strategies students use when reading (Israel, 2007). However, as a self-report survey MARSI relies on each student’s ability to interpret the language and meaning of the questions, and accurately recount their strategy use. While an empirically validated tool (Mokhtari & Reichard, 2002), it has clear limitations for use with young children and is recommended for elementary and secondary students. The Israel (2007) modified MARSI can be viewed in Appendix C.

The Metacomprehension Strategy Index (MSI) (Appendix C) developed by Cassidy Schmitt (2005) is a 25 multiple-choice questionnaire designed to assess student comprehension awareness. Strategies tested include prediction, previewing, purpose setting, self-questioning, activating prior knowledge, summarising and applying fix-up strategies. Once again, as a self-reporting tool it relies on each student’s ability to interpret both question intent and self-reflection skills.

2.5.9.3 Observational methods: C.Ind.Le

The reoccurring argument that metacognition is believed to be a late developing skill has been based on the fact that young children do not perform well in metacognitive testing. One recent study argues for the use of observational methodology in identifying and assessing metacognition in young children from 3 to 5 years of age. Whitebread, Coltman, Sangster, Grau et al. (2007; 2009) conducted a two year research study (the Cambridgeshire Independent Learning in the Foundation Stage – C.Ind.Le) with young children in English Nursery classrooms producing two observational instruments: the C.Ind.Le Coding Framework (for research purposes), and the Children's Independent Learning Development (CHILD 3-5) checklist (a classroom assessment tool). The C.Ind.Le study was driven by a similar research question to this current study, questioning the common-held belief that metacognitive abilities are late developing skills. The study was driven by the hypothesis that with ‘more sensitive methodologies, they (metacognitive abilities) could be observed in much younger children’ (Whitebread et al., 2009, p. 69).

This work is not the first to take on the challenge of identifying self-regulation in the young. In recent years several studies in the field of psychology have focused on executive functioning in the young. For example, in 2008 Ponitz, McClelland, Connor et al. developed a tool to assess children’s behavioural regulation in early childhood settings. In a book by Bronson (2000), the theoretical underpinnings of self-regulation in early childhood are examined. Bronson highlights that psychologists have long identified similar behaviours in the young using terminology such as ‘impulse control, inhibition, self-control, self-management, self-correction, and independence’ (cited in Goldstein, 2007, p. 82).

Bronson writes that the development of self-regulation is so strongly linked to the social environment that it has been described as a gradual shift from control by others to self-control. Evidence is presented supporting that socialization experiences produce neurohormonal changes in the developing brain, strongly implicating that different

experiences lead to differences in developing brain circuits. (p. 84)

Whitebread et al. (2009) articulated the difficulty of self-report methods common in most metacognitive measuring tools such as those already mentioned. Another issue supporting this aspect of self-report methods is the difficulty young children have in understanding, processing and expressing ‘mental verbs’. Several studies have shown that developing an understanding of mental verbs, such as ‘thinking’, ‘knowing’ and ‘forgetting’, is a long-term process (Astington & Olson, 1990; Lyon & Flavell, 1993). However, Johnson and Wellman (1980) and Shatz, Wellman and Silber (1983) demonstrated that very young children from about four-years of age could correctly use mental verbs in conversation, even though their understanding of these cognitive states is limited. Therefore, there is still conjecture with regards to how young children will perform with surveys relying on mental verbs in their questions.

The C.Ind.Le coding framework (Whitebread et al., 2009) (Appendix D) acknowledges these difficulties and suggests behavioural observation techniques to be more effective. Whitebread et al.’s (2007) study addressed prospective concerns through methodology choices:

First, by collecting the data within naturalistic settings ... Second, by involving the classroom teachers in part of the analysis, since they had specialised knowledge of the children and the classroom contexts involved. Third, by video-recording the data, thus permitting the analysis of the data more fully in its social context (p. 70).

From the video-recordings metacognitive and self-regulatory ‘events’ or behaviours were identified and coded. ‘This involved the identification and analysis of specific verbal and non-verbal indicators of metacognitive and self-regulatory behaviour and of the self, other, or shared focus of the behaviour’ (2009, p. 71). The final coding framework focuses on three metacognitive behaviours:

- Metacognitive knowledge: the individual’s knowledge about personal, task and strategy variables affecting their cognitive performance.

- Metacognitive regulation: the cognitive processes taking place during ongoing activities i.e. planning, monitoring, control and evaluation.
- Emotional and motivational: the learner's ongoing monitoring and control of emotions and motivational states during learning tasks. (p. 72)

Beside the advantage of this tool specifically addressing the needs of young children as mentioned above, it also reflects Tarricone's (2011) conceptual framework to a certain degree. 'Metacognitive knowledge' and 'Metacognitive Regulation' draw clear links with the two major core-components *Knowledge of Cognition* (KoC) and *Regulation of Cognition* (RoC). The third area 'Emotional and motivational' might be situated within the Tarricone subcategories of 'Person' (KoC) and 'Metacognitive Feelings' (RoC).

2.5.9.4 Think Aloud protocols

Cognitive psychology has, for many years employed verbal reporting protocols in determining cognitive processing in both adults and more recently, children (Ericsson & Simon, 1993; Sasaki, 2008). Guided by their Information Processing framework (IP) and the premise that participants verbalise their inner speech, Ericsson and Simon (1993) identified two categories of verbal reports: verbalising thoughts during the completion of a task; and verbalising thoughts at the conclusion of a task. These were then used to develop their assessment tool called Think Aloud (TA) protocols. The TA protocols have become popular in both teaching and assessing thinking processes (Bauserman, 2005; Helms-Lorenz & Jacobse, 2008; Israel 2007; Pressley & Afflerbach, 1995).

Using think-alouds as a metacognitive assessment tool allows teachers to document students' actual thought processes while reading. The verbal reports can be analysed to confirm or disconfirm which metacognitive strategies are actually being utilized and when ... because think-alouds are the best measures of students' cognitive thought processes, they are valuable assessment tools. (Israel, 2007, p. 72)

However, there have been critics who believe there are limitations to TA protocols, claiming that the verbalisations are not ‘direct representations of cognitive processes but rather contain features that indicate recipient orientation’ (Sasaki, 2008, p. 371) that is, they are affected by the socially situated construct of the study. The argument proffered by opponents is that the listener exerts a strong influence on the speaker (Smagorinsky, 2001). Saskai’s 2008 Japanese study focused on language usage during TA protocols and the results supported Smagorinsky’s claim ‘that even when the social context was controlled, strong orientation to a listener was observed’ (p. 371), and that social factors, context and content might influence the data collected using this method. The theory of language as social practice and construct would also support this stance. Saskai goes on to warn ‘thus it is important that researchers acknowledge that the protocol is a socially situated activity and that we collect, analyse, and interpret verbal report data carefully, based not only on what is produced but also on how it is produced’ (p. 372).

Another important issue to consider with TA protocols is that only conscious activities can be verbalised, meaning ‘unconscious processes taking place during learning cannot be assessed by these verbal methods’ (Bannert & Mengelkamp, 2007 p. 45). This may be a significant issue for assessing metacognition depending on the definitions supported. For example, for those who consider metacognition to be a conscious act (Brown, 1978; Paris et al., 1983) TA protocols are not an issue. For those who believe metacognitive strategies also exist at an unconscious level, or have been developed to a stage of automaticity (Samuels et al., 2005) then TA protocols may be limited in their effectiveness in identifying this type of behaviour. Unfortunately, there has not been a consensus reached in the field with regards to this matter; however, there is a growing trend towards incorporating both stances (Veenman, 2006).

2.5.9.5 Measuring conscious or unconscious behaviours

The final discussion in this section, significant for the current study, is the ongoing argument of whether metacognition is a conscious act or can exist at a subconscious level. Flavell (1971) claimed that metacognition should be deliberate and intentional in achieving cognitive

tasks, linking this with Piaget's formal operational stage. Tarricone (2011) discusses Efklides, Demetriou and Metallidou's (1994) perspective:

Mindful, conscious reflection affects and facilitates the development of propositional reasoning ability in early adulthood and late adolescence. Although metacognition impacts on propositional reasoning in the formal operations stage, it is 'not due to explicit, reflective monitoring but to changes in cognitive functioning and monitoring based on metacognitive experience only. (Efklides et al. as cited in Tarricone, 2011, p. 19)

Much of the literature dealing with age-specific issues and metacognition insist it is a late-developing skill (Baker, 2005; Brown, 1987; Griffith & Ruan, 2005). However, recently there has been a paradigm shift. In 2006, Veenman et al. (2008) suggested metacognition might start in children from 8 to 10 years. Whitebread, Bingham, Grau, Pasternak, and Sangster (2007) identify a growing body of evidence that refutes these assumptions suggesting 'studies with young children have often focused on their limitations in metacognition and self-regulation ... the abilities of young children being under-estimated ... arises[ing] from an over-reliance on children's verbal abilities' (p. 64). This discussion is ongoing.

2.5.9.6 Conclusion

There is a strong case for the use of observational tools for identifying the interaction between cognition, metacognition, knowledge, and ability in young children. Observing individuals during problem solving and reading activities can reveal a variety of behaviours that indicate metacognitive activity (e.g. utterances such as 'um'; a raised eyebrow). Agreement as to what constitutes a metacognitive behaviour may reduce the usefulness of observational data (Gay, 2002), or it may force researchers to move the field forward allowing for the identification of early, complex cognitive and executive functioning in children, which in turn will inform and improve future pedagogical practices in education.

2.6 Conclusion

This chapter has reviewed an extensive and wide range of research fields in order to situate and inform this current study. An overview and critique of current and historical understanding and research into talented readers, reading pedagogy, critical literacy and metacognition has been presented. Chapter 3 synthesises much of the information discussed in this chapter and presents the methodology, research design and procedures undertaken in the Pilot and Primary Studies for this research project.

CHAPTER THREE: RESEARCH METHOD

3.1 Introduction

This present study had a dual focus: to identify the nature of the relationship that exists between critical literacy and metacognition, and whether talented and typical readers employ metacognition differently during critical literacy activities. Investigating the relationship between metacognition and critical literacy has not previously been undertaken, and therefore comes with methodological challenges that require adapting and combining investigation methods from different and multiple disciplines. While substantial literature exists on the identification and learning needs of talented readers, much of it is anecdotal. In order to fulfil this purpose the following research questions guide this study:

1. If metacognition is an aspect of critical literacy discourse, what metacognitive strategies are required for the successful analysis, understanding and critiquing of texts?
2. How adapt are young talented readers at employing metacognition than their age peers, when performing critical literacy discourse?
3. What metacognitive strategies are employed by talented readers compared to typical readers when answering critical literacy questions?
4. How do talented readers differ from their typical peers?

3.2 Design

The nature of this research suggested a qualitative methods approach was needed. The literature review stated the difficulties of research within the field of metacognition, and in particular when working with young children. Therefore, the selection of methods and tools for this study needed to address the purpose, while giving careful consideration to the age of participants. The research process is illustrated in Figure 3.1.

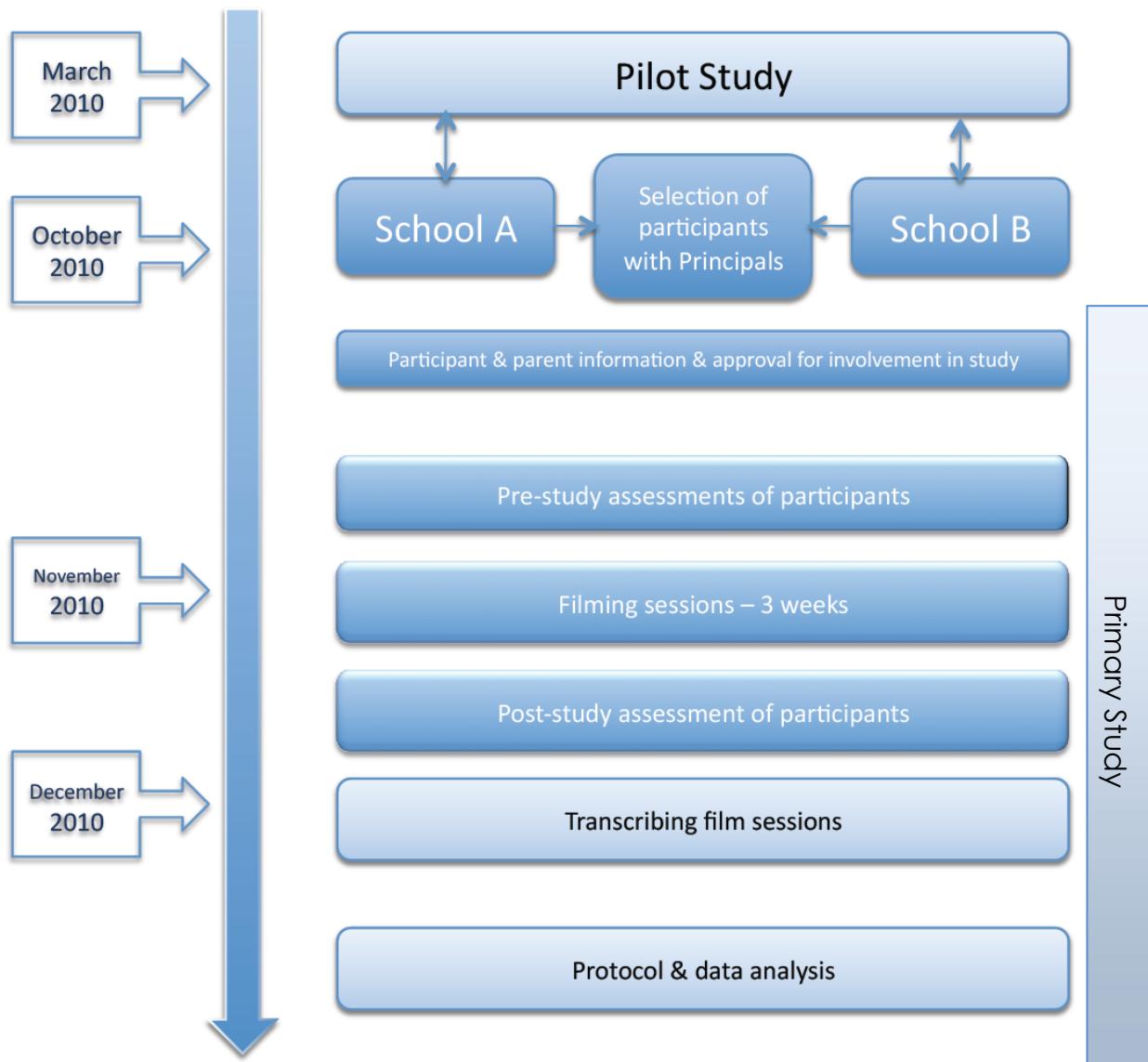


Figure 3.1. The Research Process.

This present research began with a Pilot Study to evaluate the effectiveness and appropriateness of the selected tools and procedures in readiness for the primary study. This will be discussed further in section 3.3.

For the primary study, individual participant profiles were created from pre- and post-study assessment data. These included school-based standardised reading scores, and data collected by this study. Data included a common standardised reading assessment, a reading attitudinal survey, and metacognitive self-reporting surveys. Returned parent questionnaires also contributed to individual profiles giving some information of participants' home and school reading experiences.

The Primary Study collected data from three separate filmed sessions as participants read and answered critical literacy questions for three different texts including a poem, a picture book and a short story. All responses were then transcribed for discourse analysis. Analysing critical literacy competency and metacognitive behaviours for each participant required evaluating the data for these two components separately, and then comparing the results to determine possible patterns and relationships within and between the data.

The in-depth literature review provided a sound foundation for the selection of appropriate instruments with which to analyse critical literacy and metacognition data. The following section will discuss the instruments used and the reasons for their employment.

3.2.1 Instrument Design

This study required the adaptation of a number of established research tools used across multiple disciplines to meet its purpose. For the metacognitive component of this study, a modified version of Whitebread et al.'s (2007) C.Ind.Le Coding Scheme was employed (see Appendix D), in tandem with Tarricone's (2001) Conceptual Framework and Taxonomy of Metacognition (Appendix B). For the critical literacy component of this study McDaniel's (2006) Critical Literacy Question Framework (Appendix A) was adopted and scoring procedures developed to compliment the ideology of this philosophical approach.

3.2.2 Metacognitive Behaviours Observational Tool

The Cambridgeshire Independent Learning in the Foundation Stage (C.Ind.Le) project designed a coding scheme to observe, record and analyse metacognitive behaviours in very young children (Whitebread et al., 2007). While the age range of this current study involved older children, the observational nature of the C.Ind.Le offered an avenue for insight not available in any of the commonly used metacognitive self-reporting tools employed in most research into metacognition.

The 'C.Ind.Le Coding Scheme for both verbal and nonverbal indicators of metacognition and self-regulation'(C.Ind.Le) focuses on the same two core components highlighted in

Tarricone's (2011) conceptual framework, that being ¹Metacognitive Knowledge or Knowledge of Cognition (KoC) and Metacognitive Regulation also known as Knowledge of Regulation (RoC). Therefore, the integration of these two tools for this current study was appropriate, and amalgamating both did not interfere with the integrity of either model. The decision was made not to include C.Ind.Le's third component of 'emotional and motivational regulation' as it did not add relevant data that would contribute to the purpose of this current study; however, it may be used in future investigations using the data collected for this study. The original C.Ind.Le 'Categories' remained unchanged. Where possible the only changes to the 'Descriptions of Behaviours' were made to reflect the tasks being completed for this study. For example, for 'Knowledge of Tasks' the behaviours required for this study involved aspects such as "completes the requirements of the task i.e. independently reads the question and answers it out loud." Both the original C.Ind.Le Coding Scheme and the modified version used by this current study are included in Appendix D.

3.2.3 Taxonomy of Metacognition

Tarricone's (2011) taxonomy details sixty-nine assertions across the two core components of Metacognitive Knowledge (KoC) and Regulation of Metacognition (RoC), and super-categories of declarative, procedural, conditional, metacognitive skills and experiences (see Appendix B). Only eighteen of these assertions support the observational methodology utilised by this present study. The Tarricone assertions selected for this study are highlighted in Appendix B in their original form. These eighteen assertions were then modified linguistically to adapt to the specific tasks of this present study. The modified matrix used in this current study (Appendix B) have placed Tarricone's original assertions in the left column, the linguistically adapted assertions in the far right column, and the Identifiers in the middle column, which were used to pin point specific behaviours and link them to the metacognitive assertions. These adaptations were discussed at length with the co-coder of this study (see Appendix D) to ensure that the

¹ In recognition of these instruments (*C.Ind.Le* and *Tarricone Conceptual Framework*) all four terms have been adopted and are referred to in this current study.

integrity of each assertion was not lost in the modification process. There was further in-depth focus on the modifications and ‘Identifiers’ throughout the co-coding and analysis process for this present study.

3.2.4 Think Aloud Protocols

As discussed in the literature review, a popular strategy used in metacognition research continues to be Think Aloud (TA) protocols. Limitations of TA protocols were also discussed, such as the influence the listener can have on the speaker. This very issue was evident in the Pilot Study, and will be discussed in section 3.4. The Primary Study overcame this issue by filming sessions with participants alone in a familiar glass-door or glass-walled room within their schools. These rooms were specifically selected so that the researcher could keep unobtrusive visual contact with participants in case any problems presented themselves. Participants read out loud from a script (Appendix F) that gave detailed descriptions of the procedures they were to follow, including reading, thinking and saying everything out loud for the video camera. Reading out loud allowed the researcher to detect errors that might lead to misunderstanding.

3.2.5 Critical Literacy Questions

While some questioning frameworks used in classrooms were discussed in Chapter 2, few have been validated through empirical research. One exception is Apol’s 1998 framework and study, which was later adapted and modified by Cynthia McDaniel in her 2006 critical literacy study (Appendix A). Five of McDaniel’s six questions were used as points of reference for data collection and analysis of critical literacy in this present study. Considerations of age appropriateness of the participants and the design of the tasks for this current study saw the elimination of the first of McDaniel’s questions. The five questions were adapted as critical literacy elements for this study:

1. Questioning power (dominance and submission)?
2. Addressing the text’s unspoken, underlying message, such as influences of the author’s values, contemporary culture and/or place?

3. Questioning the absences/gaps/silences in the text (what is missing) or what is represented as normal?
4. Identifying similarities with other texts (“texts” in a broad sense, including popular culture)?
5. Consideration of the influence of his/her own experience and/or culture when responding to the text?

The following section outlines the pilot study conducted as a precursor to the Primary Study that determined the suitability of the research design, procedures and methodology in achieving the purpose of this research.

3.3 Pilot Study

The main aim of the Pilot Study was to identify and refine the instruments, texts and processes in preparation for the primary study. A single research question guided the pilot study: *Is metacognitive skilfulness evident during critical literacy questioning activities?* The Pilot Study was important as it highlighted the need to change protocols that allowed for valuable data to be collected. This is discussed further in section 3.3.4.

3.3.1 Site and Sample

The pilot study took place in two Independent Anglican sister schools approximately twenty kilometres apart, and in similar socioeconomic areas. School A is a Transition (4 year olds) to Year 6 Junior School, and adjoins the Senior School that caters for students from Years 7 to 12. School B is a Transition to Year 4 School, with most students continuing their education in Years 5 and 6 at School A. Both are feeder schools for the Senior School. Written permission was received from the parents of ten students invited to participate and to be filmed in the pilot study. Participants ranged from Year 1 to Year 5, and were selected by this researcher based on their inclusion in English extension classes and advanced reading abilities. A rapport existed between the researcher and the participants as most had been taught by the researcher during the previous

two years. This rapport and familiarity proved to be a limitation in the TA protocols, and will be discussed in section 3.3.3.

3.3.2 Instrumentation and Data Collection Process

The Pilot Study used a single text: the picture book by Liz Lofthouse titled ‘Ziba Came On A Boat’. The language of this text is situated at a Stage 2 level, and suitable for all participants, with the youngest participant reading at a Stage 2 level. The text explores refugee issues told through the voice of a young Afghan girl, and supported by rich images. At the time of this pilot study, refugee issues were prevalent in the media, which offered an opportunity for participants to make real world connections with the text. The questions asked with this text are in Appendix F.

3.3.3 Data Collection Procedure

The ten sessions ran over a two-week period. Each session began with the participant reading the picture book on their own in a quiet space of the library, before joining the researcher at a desk in front of a video camera. Although written permission had been gained from parents and participants allowing filming, the researcher verbally asked each participant for permission to film before turning the camera on. Once filming began the participant was asked fourteen questions that included both critical literacy and inferential questions.

An unexpected outcome was noted in the first set of filmed sessions. It was anticipated that the participants might become shy or reticent once the camera was turned on. What was not expected was the significant dip in confidence in all of the participants, and a sudden reliance on the researcher to support and validate their answers. The ten participants for this study had been selected based on their reading ability and their confident, independent natures. Once the camera was turned on, responses became reticent and lacking confidence. With the more difficult questions, a number of participants gave their answers and then asked the researcher if they were correct. There was also no evidence of thinking out loud by any of the participants in these sessions. The study method was failing to elicit the free-flow of thoughts and dialogue required

by Think Aloud protocols, and reflecting a degree of Saskai's (2008) findings 'that even when the social context was controlled, strong orientation to [the] listener was observed' (p. 371).

To overcome this issue, a change in procedure was trialled with the four remaining participants. After discussion with the school principals, and with the participants' permission, the filming protocols were altered. With the principal's help a central, small, windowed room was found in each school, and a single table, chair and the video camera placed inside. At the start of each session the procedures were verbally explained to each participant by the researcher. These same instructions were also included on the main script that was left in the room with the picture book and the participant. These instructions explained to participants that they were to read the instructional script out loud to the camera, to read the picture book aloud, and finally to read and verbally answer all of the questions on the script. They were encouraged to express any thoughts or questions they might have out loud, which was again reiterated in the instructional script. These final sessions were carried out with two Year 6 students, a Year 4 and a Year 1 student. Participants had visual contact with the researcher and their principal, who waited outside the room during the filming process. Participants were instructed that if they did not understand what to do, or had any concerns during the process that they could leave the room to gain assistance.

Each of these four filmed sessions produced far more detailed responses from the participants than the previous sessions with the researcher present. There were a number of questions asked by each of the participants including questioning the meaning of questions; however, all participants attempted to solve their questions independently, without calling on the researcher for assistance. An unexpected outcome was the level of 'discussion' between the participants and the camera, directing their questions and thoughts at it. This practice appeared to assist the participants' problem-solving processes as they verbalised their thoughts aloud. This change in protocol elicited far more rich, relaxed and natural responses from all four participants, and the decision was made to apply these protocols to the Primary Study.

3.3.4 Design of Critical Literacy Questions

One issue identified in the Pilot Study was the design and wording of some questions. For example, a number of students were confused with the meaning of ‘power’ within questions, often associating it with ‘strength’ rather than dominance or submission. Adding or substituting the word ‘control’ was found to be more accessible for participants within the context of critical literacy theory.

Another issue identified during the pilot study was the need for questions to include statements such as ‘explain why you think this’. This type of phrase encouraged self-reflection by the participant. Some questions did not include this phrasing and this made identifying metacognitive behaviours more challenging in responses to those questions.

3.3.5 Evaluation of Data Collection Procedure

Responses were not transcribed in the Pilot Study, but later viewed by the researcher to determine if the language and clarity of the instructions were suitable for independent progress by the participants in the Primary Study. When designing the instructional script for the Primary Study the age of the participants had to be considered, as well as the reading ability of participants, as this study would involve both talented and typical readers.

The research question as to whether metacognitive skills were drawn upon by students during critical literacy questions was confirmed in the final four sessions when the researcher was removed from the room during the filming process. In these sessions participants were observed using metacognitive behaviours such as self-talk, monitoring of their answers, returning to the text to find answers, using the language of the text to answer questions, and independently completing the goals of the task.

3.4 Primary Study

The Primary Study began approximately six months after the Pilot Study at a time selected by the principals of the two schools involved. Initial meetings were held with the principals to select suitable participants for the study. The aim of these meetings was to identify both talented

and typical readers from Years 1 through to Year 6, based on school administered standardised test results (see section 3.4.4.1) and classroom achievement. From this, forty students were selected and invited to participate in the study, from which thirty acceptances were returned. With the exception of one withdrawal from the study, by a Year 1 boy after the initial group meeting, all participants completed at least one of the reading tasks, with many completing all three. Some participants did not complete all three tasks due to absences from school on data collection days. Table 3.1 shows the number of participants in each grade and the gender distribution. While every effort was made to have equal numbers in each grade, final numbers relied on the permissions granted and received from parents and students to join the study.

Table 3.1

Range Distribution of Participants in the Primary Study

	TOTAL	MALE	FEMALE
Year 1	2	2	0
Year 2	5	3	2
Year 3	6	3	3
Year 4	2	1	1
Year 5	6	3	3
Year 6	8	3	5
TOTAL	29	15	14

3.4.1 Sites

The primary study took place in the same location as the pilot study, that being two Independent Anglican sister schools approximately twenty kilometres apart, and in similar socioeconomic areas. School A is a Transition (4 year olds) to Year 6 Junior School, and adjoins the Senior School that caters for students from Years 7 to 12. School B is a Transition to Year 4 School, with most students continuing their education in Years 5 and 6 at School A. Both are feeder schools for the Senior School.

3.4.2 Participants

Thirty invitations were accepted to participate in this study. After the initial meeting before the beginning of the first filming session, one Year 1 participant chose not to continue and withdrew from the study. Twenty-nine participants chose to continue with the study, from 7 to 12 years of age across Years 1 through to Year 6. The group of 14 girls and 15 boys (see Table 3.1) were mostly of European-Australian descent, with one participant of Indo-European descent.

3.4.3 Identification of Talented Readers

As discussed in Chapter 3, the groupings of participants for this study, as being either ‘talented’ or ‘typical’ readers, was originally based on school performance for the current year. Student participants were selected based on school test results, classroom reading groups, and recommendations by their principal. Due to different testing protocols across the two sites there was a need to augment reading abilities using a single standardised reading assessment. The Australasian Council for Educational Research (ACER) 2008 4th edition PAT-R comprehension test was administered to all participants of this study to standardise reading scores and confirm placement into either the ‘talented reader’ group or the ‘typical reader group’. The results of this assessment saw a third group emerge when some results did not fully support the inclusion of participants in the ‘talented’ group. Three groupings were established for this study: Group 1, *talented readers*; Group 2, *possibly talented readers*; and Group 3, *typical readers*. For the purpose of this study, the definition of *talented readers* has adopted the Gagné’s (2008) definition of reading performance in the top 10% of one’s age peers.

3.4.4 Standardised Reading Test Results

Within this study, 23 participants were nominated by their school principals as *talented readers* (see Table 3.2). Of this group, 16 achieved results in the top 10% for their age in the PAT-R test, and were placed in Group 1 *Talented Readers*. Highlighted in Table 3.2 are four results that show their achievement in the school-based testing was less than Gagné’s (2008) suggested 10% benchmark. This definition may have excluded them from classroom talent

groupings, yet their PAT-R results clearly situate them as talented readers according to Gagné. The decision by their teachers to include these students in gifted and talented reading programs clearly suited their learning needs. It may also have been the inclusion in such programs that enabled them to work at this higher rate, despite their earlier achievement below the top10% benchmark. These four participants were included in Group 1 as their PAT-R scores supported teacher nomination.

Table 3.2

Participants nominated as talented readers and validated with PAT-R

Participant Pseudonym	Identification Code	Grade	Age-years	Gender	TORCH FEB/OCT	PAT-R NOV	Nomination	Study Group
Michael	1-7MJMB	1	7	M	Not completed	91%	T	1
Steven	1-7MVSC	1	7	M	Not completed	91%	T	1
Noah	2-8MVNM	2	8	M	Not completed	92%	T	1
Heather	2-8FJHG	2	8	F	Not completed	98%	T	1
Sarah	2-8FJSB	2	8	F	Not completed	99%	T	1
Ann	3-9FVAJ	3	9	F	99%	94%	T	1
Caleb	3-9MVCW	3	9	M	99%	99%	T	1
Isla	5-10FJIB	5	10	F	91%	97%	T	1
Cooper	5-10MJCJ	5	10	M	absent	94%	T	1
Lucas	5-10MJLG	5	10	M	81%	90%	T	1
Hayley	5-11FJHM	5	11	F	96%	94%	T	1
Ava	6-11FJAN	6	11	F	73%	94%	T	1
Kylie	6-12FJKJ	6	12	F	absent	94%	T	1
Ronald	6-12MJRD	6	12	M	99%	97%	T	1
Simon	6-12MJSY	6	12	M	84%	94%	T	1
Audrey	6-12FJAW	6	12	F	88%	98%	T	1

T= Talented reader; M= male; F = female;

Table 3.3identifies four participants who had been nominated by their principals and class teachers as talented readers, yet their scores in the PAT-R test were below the 10% benchmark.

Two of this group had scored above 10% in school-based tests. These four participants were also included in Group 2 as *possible talented readers*.

Table 3.3

Participants nominated as talented readers with typical PAT-R results

Participant Pseudonym	Identification Code	Grade	Age	Gender	SchoolTORCH FEB / OCT	PAT-R NOV	Nomination	Study Group
Lee	2-7MVLE	2	7	M	Not completed	88%	T	2
Allan	3-9MVAD	3	9	M	99%	82%	T	2
Jacob	5-11MJJD	5	11	M	96%	86%	T	2
Bonnie	6-12FJBM	6	12	F	84%	88%	T	2

The principals nominated another six participants as *typical readers*. Two of this group are shown in Table 3.4 with significantly contradicting results i.e. typical reading results in school-based tests, yet extraordinary PAT-R results. Because of this discrepancy and the inability to validate results due to continuance issues, these two participants were excluded from selection for case study close analysis.

Table 3.4

Participants nominated as typical readers with talented PAT-R results

Participant Pseudonym	Identification Code	Grade	Age	Gender	SchoolTORCH FEB / OCT	PAT-R NOV	Nomination	Study Group
Alana	3-8FVAR	3	8	F	78%	94%	N	2
Lyn	5-10FJLC	5	10	F	66%	94%	N	2

N = Typical reader; M= male; F = female

Table 3.5 below shows two of nominated six typical readers achieving results in the PAT-R that supported inclusion into Group 3 as *typical readers*. A point of interest is Connor's decline of 20% in reading ability from the beginning of the year.

Table 3.5

Participants nominated as typical readers and validated with PAT-R test

Participant Pseudonym	Identification Code	Grade	Age	Gender	SchoolTORCH FEB / OCT	PAT-R NOV	Nomination	Study Group
Bradley	2-8MVBP	2	8.2	M	absent	68%	N	3
Connor	6-12MJCS	6	12	M	88%	66%	N	3

Finally, Table 3.6 displays the five participants who did not complete the PAT-R due to absence from school during testing days. Of this group Nathan had been included in the talented reading group all year, yet his earlier TORCH test results might indicate he had been misplaced. As he only completed one session for this study he was not selected for case study so this issue could not be followed up in the scope of this study.

Table 3.6

Participants who did not complete the PAT-R test

Participant Pseudonym	Identification Code	Grade	Age	Gender	SchoolTORCH FEB / OCT	PAT-R NOV	Nomination	Study Group
Sian	3-9FJSV	3	9	F	90%	absent	T	1
Nathan	3-9MJNP	3	9	M	79%	absent	T	2
Leila	4-9FJLY	4	9	F	65%	absent	N	3
Bob	4-9MVBR	4	9	M	98%	absent	T	1
Lacey	6-11FJLC	6	11	F	62%	absent	N	3

T = Talented reader; N = Typical reader; M= male; F = female

The implications of differentiated results across various standardised tests and of the 10% cut off benchmark for identifying talented readers will be discussed in Chapter 9. Table 3.7 overviews all of the participants that took part in this study and Table 3.8 below identifies the 11 participants case studied in Chapters 5, 6 and 7.

Table 3.7

Overview of Participants in the Study

Participant Pseudonym	Identification Code	Grade	Age (years)	Gender	J- School A V- School B	Ability Groups	Sessions completed		
							Poem	Picture Book	Short Story
Michael	1-7MJMB	1	7	M	A	1	✓	✓	✓
Steven	1-7MVSC	1	7	M	B	1	X	✓	✓
Noah	2-8MVNM	2	8	M	B	1	✓	✓	✓
Lee	2-7MVLE	2	7	M	B	2	✓	✓	✓
Bradley	2-8MVB	2	8	M	B	3	X	✓	✓
Heather	2-8FJHG	2	8	F	A	1	✓	✓	✓
Sarah	2-8FJSB	2	8	F	A	1	✓	✓	✓
Sian	3-9FJSV	3	9	F	A	1	✓	✓	✓
Nathan	3-9MJNP	3	9	M	A	2	✓	X	✓
Ann	3-9FVAJ	3	9	F	B	1	✓	✓	✓
Allan	3-9MVAD	3	9	M	B	2	✓	✓	✓
Caleb	3-9MVCW	3	9	M	B	1	✓	X	✓
Alana	3-8FVAR	3	8	F	B	1	X	✓	✓
Layla	4-9FJLY	4	9	F	A	3	✓	X	✓
Bob	4-9MVBR	4	9	M	B	1	✓	X	X
Isla	5-10FJIB	5	10	F	A	1	✓	✓	✓
Cooper	5-10MJCJ	5	10	M	A	1	✓	✓	✓
Lucas	5-10MJLG	5	10	M	A	1	✓	✓	✓
Lyn	5-10FJLC	5	10	F	A	3	✓	✓	X
Jacob	5-11MJJD	5	11	M	A	2	✓	X	✓
Hayley	5-11FJHM	5	11	F	A	1	✓	✓	✓
Lacey	6-11FJLC	6	11	F	A	3	X	X	✓
Bonnie	6-12FJBM	6	12	F	A	1	X	✓	✓
Kylie	6-12FJKJ	6	12	F	A	1	✓	✓	✓
Connor	6-12MJCS	6	12	M	A	3	✓	✓	✓
Ronald	6-12MIRD	6	12	M	A	1	✓	✓	✓
Simon	6-12MJSY	6	12	M	A	1	✓	✓	✓
Audrey	6-12FJAW	6	12	F	A	1	X	✓	✓

T = Talented reader; N = Typical reader; M= male; F = female

Table 3.8

Participants selected for case studies

Participant Pseudonym	Code	Grade	Age (years)	Gender	TORCH/ FEB / OCT	PAT-R NOV	Nominated	GROUP
Michael	1-7MJMB	1	7.5	M	not completed	91%	T	1
Sarah	2-8FJSB	2	8.3	F	not completed	99%	T	1
Sian	3-9FJSV	3	9.6	F	90%	a	T	1
Allan	3-9MVAD	3	9.5	M	99%	82%	T	2
Isla	5-10FJIB	5	10.2	F	81%	97%	T	1
Ronald	6-12MJRD	6	12.2	M	99%	97%	T	1
Lee	2-7MVLE	2	7.11	M	not completed	88%	T	2
Jacob	5-11MJJD	5	11.8	M	96%	86%	T	2
Bradley	2-8MVBP	2	8.2	M	not completed	68%	N	3
Leila	4-9FJLY	4	9.4	F	65%	a	N	3
Connor	6-12MJCS	6	12.1	M	88%	66%	N	3

Afflerbach (2002) identified information that required detailed descriptions when using verbal protocols in research studies. The following sections use Afflerbach's guidelines to provide the necessary information required by verbal protocol research such as this current study has undertaken.

3.4.4.1 Participant reading ability

Participants were selected in consultation with the school principals based on annual school testing data using standardised tests of either TORCH (for Years 3 - 6) or Waddington (for Years 1 and 2). Inclusion into this study required participants to be performing at least at an average or advanced reading level. Average reading ability meant that students were reading at their grade or Stage level, while advanced reading ability meant that students had achieved scores in the top 10 percentile ranking for their chronological age (Gagné, 2008) in the PAT-R standardised reading assessment.

3.4.4.2 Baseline instruments assessing reading and metacognitive ability

Base line data needed to be collected on each participant to develop individual profiles that would identify if a relationship existed between reading ability and levels of metacognitive

skilfulness in the analysis phase. To this end, the selection of instruments measuring aspects of reading and metacognition in establishing these profiles is outlined below.

3.4.4.2.1 PAT-R 4th edition 2008 comprehension test – ACER.

The decision to administer the Progressive Achievement Tests in Reading (PAT-R) standardised reading test was made for three reasons. Firstly, the standardised reading scores provided by the school-administered tests were nine months old, with some participants having missed these earlier tests all together. Secondly, two different tests were used by the schools, i.e. TORCH for Years 3 – 6 and Waddington for Years 1 - 2, and therefore common data were required. Thirdly, the PAT-R would give additional and updated information as to whether Group 2 participants should be qualified as ‘talented’ or not.

The PAT-R is a suitable research instrument for this study in that it is designed for use for Kindergarten through to Year 10 and has been recently updated ‘to reflect the variety of text and format types that students encounter, current language use, technological advances and the use of testing for in-depth diagnosis and intervention’ (ACER 2008, online). As an Australian-based product, it suited the experiences and contextual knowledge of participants in this study.

3.4.4.2.2 Elementary Reading Attitude Scale (ERAS).

The ERAS by McKenna & Kear (1990) (see Appendix C) is a twenty-item instrument designed for students from Years 1 to 6. The first ten items assess attitudes toward recreational reading, and the next ten assess attitudes towards academic reading. The scale has a four-point response system using pictorial anchors of the cartoon character Garfield. Even though many participants had not viewed the Garfield image previously, the emotions expressed by this cartoon character were explained and discussed prior to the participants completing the survey.

3.4.4.2.3 Parent questionnaire.

A questionnaire designed by the researcher of the present study was sent out to each participant’s parents to gain further background information with regards to familial attitudes to

reading, reading experiences before school and currently (see Appendix C). Of the thirty questionnaires sent home, seventeen were returned. Examples of some of the questions included:

- 1. How would you describe your child as a reader today?*
- 2. At what age did you child begin reading words without assistance?*
- 5. What home reading experiences was your child involved in*
 - Before school*
 - Once your child started school:*
- 19. To what extent did you, or other family or friends, assist your child in learning to read before s/he started school?*

3.4.4.3 Participant groupings

The original intent of this study was to have two study groups: one group of ‘talented readers’ performing in excess of 2 years (Reis et al., 2004) of their chronological age, and a second group of ‘typical readers’ performing at age expectation.

When dividing participants into these groups it became obvious that a third grouping was required. There were several participants who had been identified by their teachers and principals as ‘talented’, yet the standardised reading test results did not support this assumption. Additionally, parent questionnaires and the ERAS task also supported the regroupings of participants. It was decided that the study would compromise with three groups to analyse if reading ability was a significant variable and how their metacognitive behaviours compared with the talented and typical reader groups. This is discussed further in Chapter Eight. The final three groups for this study are displayed in Table 3.9 below.

Table 3.9

Groupings for the primary study

Group 1	Group 2	Group 3
Talented readers: scoring + 2 years compared to chronological age in school administered standardised tests.	Talented readers as identified by class teachers but not scoring as such in school administered standardised tests.	Normed readers: scoring at chronological age in school administered standardised tests.

3.4.4.4 Participant familiarity with the reading methodology

The four participants who took part in the redesigned method protocols of the Pilot Study were the only participants of the Primary Study familiar with the filming and the Think Aloud protocols of this study. While this small group had been exposed to critical literacy questioning in the Pilot Study, neither they nor the other participants had taken part in formal critical literacy activities during that school year according to discussions held with each of their teachers. The selected texts of the Primary Study were also unfamiliar to all participants according to their responses in each session.

3.4.4.5 Participant relationship with researcher

All participants knew the researcher to varying degrees. Four participants had been involved in the Pilot Study conducted by the researcher. These four, plus nine other participants, had been involved in a school-based literacy enrichment program for highly able students, taught by the researcher during the previous year, for a maximum of four hours per week. The remainder of the participants knew the researcher as a former relieving Principal in School A. At the time of the study, the researcher was no longer employed by the school. As a former teacher, it was necessary to address perceptions of ‘power’ by participants involved in the study. For this reason the school principals were integral in addressing this aspect. At the request of the researcher the principals attended all group meetings between the researcher and participants,

established appropriate venues for filming, re-introduced the researcher at the beginning of each filming session to the participants, collected permission notes and surveys from each participant, regularly visited filming sessions and kept informal contact with each participant during the data collection period. During the study, no student expressed any concerns, nor exhibited any behaviours that suggested they were troubled by the data gathering process. At the conclusion of the study, the researcher and principals debriefed on the whole process. No parents of the participants contacted the school during the research period to voice concerns, or to take up the offer to discuss the process further. Both principals were very positive about the outcome of the study and how their students had enjoyed the research process.

3.4.5 Instrumentation and Data Collection

3.4.5.1 Text types for participant responses

Three different text types² were selected and used in this study: a poem, a picture book and a short story (see Figure 3.3). In preparation for each session, participants were asked if they had previously read or viewed the text they were about to read. Only one student had viewed the picture book on the school library shelf, but had not read it. None of the texts was familiar to any of the participants prior to this study.

Table 3.10

Overview of Texts [using Afflerbach's (2002) Aspects of the Verbal Reporting and Protocol Analysis Methodology that Require Detailed Descriptions]

Text	Author	Mode of Text presentation	Degree of intactness	Length: words
<i>Air Raid</i>	Unknown	Poem	Full poem presented on a single A4 sheet	100
<i>The Rabbits</i>	John Marsden Illustrator: Shaun Tan	Picture Book	Original picture book presented	229
<i>Little Red: A Fizzling Good Yarn</i>	Lynn Roberts	Short Story	Original story a picture book. Retyped and presented without images.	869

² Each text type requires different reading skills involving specific language features e.g. imagery in poetry, integrating visual and text literacy in picture books and extended narrative skills in short stories.

3.4.5.2 Difficulty or familiarity

The texts were specifically selected based on appropriateness of content, themed links with HSIE or English curriculum content, and representations of issues that would suit critical literacy questions. As all participants were reading and comprehending at or beyond age expectations, the level of difficulty of each text was deemed suitable for the purpose of this study. The two youngest participants, both in Year 1, were talented readers reading at the Stage 2 level, and had no difficulty reading and comprehending the texts selected for this study. Reading levels, challenging words and phrases, concepts and themes of each text have been summarised, according to Afflerbach's (2002) requirements, in Table 3.11 below.

Table 3.11

Text Level, Difficulty and Themes [Using Afflerbach's (2002) Aspects of the Verbal Reporting and Protocol Analysis Methodology that Require Detailed Descriptions].

Text	Reading level	Challenging words & phrases	Concepts & Themes
Poem	<i>Late Stage 2</i> Challenge is mainly in the form of unusual metaphors	roadkill, groundlings, legion, conquer, parachute, stifle, lurking, suffocate	Environmental pollution presented using personification of plastic bags and the metaphor of an 'air raid'.
Picture Book	<i>Stage 2</i> Simple language however, meaning relies on knowledge of this historical event.	billabongs, millions, scared, weren't, 'came many grandparents ago'	'Invasion' of Australia by the British presented using visual metaphors of rabbits representing the British and numbats as the Aboriginals. Images and text work together to present the message of the text.
Short Story	<i>Early Stage 3</i> A number of challenging words, however, the familiarity of the story enables meaning making	cosy, travellers, encounters, dashing highwaymen, delicious, ferocious, prowled, drooling, short-sighted, pounced, swallowed, disguise, crooned,	Retelling of Little Red Riding Hood using gender reversal, substitution of food goods e.g. ginger beer, and negotiation skills to manipulate confrontation

3.4.5.3.4 Metacomprehension strategy index (MSI) and the metacognitive awareness of reading strategies inventory (MRSI).

Two metacognitive assessment tools, the MRSI and MSI were discussed in Chapter Two. A modified version for young children of the MRSI created by Susan Israel (2007) (Appendix E) was administered in the Primary Study rather than the original Mokhtari and Reichard (2002). Details of this modification do not add value to the current study as it has been empirically proven by Israel (2007). The MSI (Appendix C) was only administered to participants in Years 3 to 6, due to this researcher's concerns about the language of the tool for younger students. Several students were unexpectedly absent during the last days of the data collection sessions due to the start of Swimming School. Therefore, some did not complete these tools for this study, which was a limitation for the data collection and analysis procedures.

3.4.6 Procedure

The researcher met with each participant a maximum of five times, depending on their attendance at school on data collection days. The data collection timetable for both schools is displayed in Appendix C.

3.4.6.1 Pre-session meetings

The school principals attended the first meeting with the researcher and the participants at each school location, to ease any anxiety participants may have felt. This session involved explaining to the participants again what the study was about, and what would happen in future meetings together. It was also reiterated that participation was voluntary and participants could leave the study at any time. In this meeting, the ERAS survey was administered. The parent questionnaire had already been posted home, and the participants were encouraged to remind their parents to complete these surveys and return them to the school principal as soon as possible.

3.4.6.3 Procedures for reading sessions

The next three sessions involved participants being filmed working with one of the three set texts: the poem, the picture book or the short story. Each participant was provided with a script, containing a number of questions, to which they were asked to verbally respond. Examples of questions asked of the participants during the reading sessions are provided in Chapter Four of this thesis and elaborated in Chapters Five, Six and Seven and the full range of questions can be found in Appendix F.

It is acknowledged at this point that the researcher's son, who, as a former student of the senior school and trainee primary teacher at the time, had both school principals' permission to work with the participants during the filming process. This assistance included helping set up and maintaining the four cameras used for the study. Due to time limitations and the number of participants in the study, concurrent filming sessions needed to be set up and managed during the second and third sessions. At these times the assistant helped in setting up some participants with scripts and the texts, while the researcher did the same with other participants. These multiple sites were set up in large areas such as the library or hall so that the researcher was always in the same location with the assistant and all of the participants during this part of the study. The assistant's expertise was also utilised in downloading and formatting all of the films ready for the transcription process by the researcher.

Whether in a small familiar windowed room, or in a larger shared location, each filming site was set up with a chair, a desk, video camera, instruction scripts (See Appendix F) and text. Before turning the camera on the researcher, or in some instances the assistant asked the participant if they gave permission to be filmed at that time. If they answered yes, and all participants were happy to be filmed in all sessions, this question would be repeated with the camera turned on to capture their response. At the beginning of each session, the same routine was repeated, reminding participants to read the instruction sheets aloud and to do everything the instruction script asked of them. They were also reminded to speak their thoughts out loud, to

read the text aloud, and then to read out and answer the scripted questions at the completion of the text reading. At that point, the participant was then asked if they were happy to continue on their own, and the researcher or assistant would leave the participant to continue independently, while observing from a distance to avoid distractions.

3.4.6.4 Post-session tasks on participant reading ability and attitudes to reading

In the fifth and final session participants completed the PAT-R standardised reading test and MSI and/or MARSI. Participants in Years 1 and 2 were not given the MSI to complete based on this researcher's previous experience with younger children having difficulty independently completing this self-report survey. Some participants needed to leave this session early to attend Swimming School and therefore, not all were able to complete the MSI and MARSI instruments.

3.4.6.5 Novelty of the tasks

With the exception of four participants who were part of the Pilot Study, most were initially unfamiliar with the requirements of the filmed reading sessions. With the exception of two participants, all understood the written directions of the instructional scripts, independently completing all session requirements that included reading, answering and employing Think Aloud protocols without additional assistance. Two participants experienced difficulties including reading the text silently, not reading the questions out loud and only responding to some of the questions out loud. These issues were rectified in the following session with the researcher again explaining the instructions to these participants, and correct TA protocols were subsequently employed by these two participants.

3.4.6.6 Influence of verbal reporting task on designated reading task

The use of TA protocols was noticeably easier for the younger participants in the second and third sessions. The older Stage 3 participants, however, were generally comfortable and confident from the first filmed session, as evidenced in the verbosity of their responses. Some participants appeared to view the camera as their audience, addressing it directly with their answers and questions, as noted in the Pilot Study.

3.5 Data Analysis

Analysis of critical literacy responses and observed metacognitive behaviours were carried out separately. The discourse analysis procedures used are presented in depth in Chapter Four. The following sections discuss the data analysis procedures undertaken for critical literacy and metacognition data collected.

3.5.1 Analysis of Critical Literacy Answers

A total of 31 critical literacy questions were asked across the three texts that directly aligned with the five selected McDaniel's (2006) critical literacy elements(see list below). Due to the density of the data collected, 19 of the original 31 questions were selected for verbal protocol based on their ability to provide a sound cross-section of examples from each of the five elements. The questions selected for discourse analysis were superior in their clarity of intent and representation of the five McDaniel's elements they were linked to. These questions are listed in Appendix A. These 19 selected questions produced 461 responses or 45% of the transcribed responses. Each response was analysed for critical literacy awareness and this process is discussed in depth in Chapter 4. Due to poor fit with the text types used in this current study and the age of the participants, the first element of McDaniel's original list of six was removed from the analysis process. The five McDaniel elements used for this study were:

1. Question power (dominance and submission)?
2. Address the text's unspoken, underlying message, such as influences of the author's values, contemporary culture and/or place?
3. Question the absences / gaps / silences in the text (what is missing) or what is represented as normal?
4. Identify similarities with other texts ('texts' in a broad sense, including popular culture)?
5. Consider the influence of his/her own experiences and/or culture when responding to the text?

(McDaniel, 2006, p. 180)

3.5.2 Scoring Critical Literacy Answers

Scoring the responses for critical literacy competency required acknowledgement and consideration of the subjective nature of the process. Answers were therefore assessed according to justifications given in the response that included evidence from the text, world experiences or personal perspectives. It was also necessary for responses to reflect a participant's understandings or opinions of the text in light of the question being asked. Answers were either 'accepted' or 'not accepted' based on these criteria (see Figure 3.2).

Accepted	Clear opinion offered with justification Opinion given with evidence of other options considered
Not Accepted	Opinion offered with no justification No answer given Intent of answer is unclear

Figure 3.2. Marking criteria determining critical literacy competency.

Responses were not marked according to the opinion offered. Instead, most opinions were accepted if they drew on, and provided evidence from the text, world or personal experiences. If opinions were not based on textual, world or personal perspective evidence, they were not accepted. Some examples of how these categories were applied are shown in Figure 3.3 below.

Question	Response to Question	Accepted or Not Accepted	Reason
Is anyone treated unfairly in the story?	"Definitely, the main character is treated unfairly because he is hurt by the others."	✓	Clear opinion offered with justification
	"I'm not"	X	Intent of answer is unclear
	"No"	X	Opinion offered with no justification

Figure 3.3. Examples of 'accepted' and 'not accepted' responses

'Accepted' and 'not accepted' responses were further analysed according to the level of competency demonstrated. If responses reflected more than one of the five McDaniel's elements selected for this study, these were categorised as 'multiple critical literacy elements explored'. If

a response clearly gave a justified answer to a single element, this scored as a ‘single critical literacy element explored’. If responses were justified opinions, although there was not a clear link with one of the six elements, these still scored as an ‘accepted’ response. The two ‘unaccepted’ categories were for responses that either did not justify the answer usually offering simple ‘yes’ or ‘no’ responses, if the answer was unclear, or if the participant was unable to answer the question at all. The matrix used to collate critical literacy competencies for data analysis is shown in Table 3.5. The use of colour coding transferred into participant profiles and enabled easier identification in expanded collated tables.

Table 3.12

Matrix for collating critical literacy competency results

McDaniel's Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power						
[2] Underlying message						
[3] Absences / gaps						
[4] Similarities other texts						
[5] Own experiences						
Total						

3.5.3 Analysing Metacognitive Behaviours

Both verbal and non-verbal utterances were recorded in the transcriptions to assist in determining if metacognition was being employed. Verbal utterances that reflected ‘thinking sounds’, such as “um” and pauses, were important to record as these behaviours indicated regulation of metacognition within the planning, control and monitoring categories. Analysing the discourse of responses was a complex procedure, and the decision to use colour coding to

assist in identifying specific elements was made. The Discourse Analysis Frame (DAF) shown in Figure 3.4 collated the separate findings for metacognitive behaviours in the top section of the frame, and critical literacy competency in the lower section.

Metacognitive Knowledge		PICTURE BOOK Q4:	Metacognitive Regulation		
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	<i>Do you think this could really happen? Why do you think this?</i>	External utterance suggest inner thinking before answering fully	Planning	
KoT	Completes requirements of task i.e. reads question and answers it	<i>Response:</i>	Cognitive processing evident via pausing	Monitor	
KoS	Elaborates / draws on text evidence to support		Self- commentates	Detection of error/s during answer	
	Uses metalanguage in answer		Self-corrects		Control
WORD COUNT: 3			Repeats a strategy to check accuracy		
<i>Knowledge of Cognition</i>			<i>Regulation of Cognition</i>		
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer		

Figure 3.4. Discourse Analysis Frame (DAF)master

Figure 3.5 below displays an example of a completed Discourse Analysis Frame (DAF). Analysis of each response involved transferring the colour key coding displayed in each frame master, to the response in the centre column of the frame. For example, pauses within a response, reflecting cognitive pausing or reflection, were identified with blue dashes; employment of metalanguage was highlighted in pink; and repeated phrases or words that indicated an attempt to clarify meaning within the response were coloured green. Links between Tarricone's (2011) assertions evident in the response were included in the Knowledge of Cognition or Metacognitive Knowledge and Regulation of Cognition or Metacognitive Regulation columns below the response. The reason both sets of terms are included in the DAF is because the C.Ind.Le coding scaffold used the terms Metacognitive Knowledge and Metacognitive Regulation, while Tarricone's Taxonomy used the terms Knowledge of Cognition and Regulation of Cognition. By keeping both sets of terms, the DAF acknowledges these two founding models upon which it has been based. It is again noted that Metacognitive Knowledge and Knowledge of Cognition (KoC) have the same meaning, as do Metacognitive Regulation and Regulation of Cognition (RoC).

A limitation with the DAF colour coding system is the inability to label multiple behaviours or coding on a single word. For example, a repeated word may indicate multiple elements such as reflecting self-commentary, self-correction and modal language. However, single words can only be labelled with one colour. However, as this current study only requires recognition and identification of behaviours, rather than a quantitative recording of frequency of use, this limitation did not impact the results required. Equally, recording the length of a pause was not required, only that pausing was identified in the response.

Metacognitive Knowledge		POEM Q5 <i>Who does not have control?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses. (Pink)		✓ External utterance suggest inner thinking before answering fully
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing
KoS	Elaborates / draws on text evidence to support		Self- commentates
	Uses metalanguage in answer	✓	Detection of error/s during answer
WORD COUNT: 29		<i>Response:</i> The people who do not have control – are –are us. If we –we can choose – but most people don't. The government –the government has most control of this situation.	Self-corrects ✓ Repeats a strategy to check accuracy ✓ Use of modal language
Knowledge of Cognition 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident)	
<i>Multiple Critical Literacy elements explored</i> Clear opinion offered with justification [1] Questions Power & [5] Considers influences of own experiences / culture.		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>

Figure 3.5. Discourse Analysis Frame (DAF) completed sample.

One of the more challenging aspects of the analysis process was identifying modality. This is due to the existence of a number of interpretations and definitions of this literacy strategy (Narrog, 2003). Tarricone's (2011) Metacognitive Taxonomy assertions 9.33 and 9.42 reflect the importance of monitoring clarity and self-perception as part of metacognition, and therefore modal language should be considered an indicator of the regulation of cognition, and an important component for this study.

- 9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
- 9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs

*Figure 3.6.*Tarricone (2011) assertions 9.33 and 9.42.

In the field of linguistics a pragmatic distinction is often made between tenor and modality.

In comparison, in education contexts, modal words are taught as being moderators of language, and tenor a function of modality Derewianka (2009) states ‘in any particular situation, we choose different degrees of modality depending on how we want to relate to the listener/reader and how we want to portray our own level of commitment to an idea or action’ (p. 66). Therefore, in the context of this study there is a closer relationship acknowledged between tenor and modality when communicating ‘voice’ in a text. In both linguistics and education the intensity of modal words according to their intent are classified as having high, medium or low modality such as the difference between the meanings of ‘must’, ‘should’, and ‘might’. Finally, modal words can include nouns, pronouns adjectives, verbs and adverbs, and can be used in both positive and negative forms.

Returning to Derewianka’s definition above, if modal words and phrases moderate and regulate meaning, then their correct and appropriate use by a participant must indicate a level of metacognitive strategy ability. Figure 3.7 examples modal words prioritised for identification as part of the analysis process in this study. As previously justified, only modal verbs, auxiliary verbs and adverbs that directly reflected a participant’s assumptions about their own understandings, or which were used to purposefully regulate the meaning or intent of answers were identified through colour coding in the discourse analysis phase.

<i>Modal verbs & auxiliary verbs</i>			<i>Modal adverbs</i>		
ought to	was to	should	possibly	sometimes	certainly
has to	supposed to	could would	probably	always	definitely
have to	not really may	can	perhaps	never	a bit
need to	might	will	maybe	likely	a little
is to	must		surely	in fact	usual

Figure 3.7. Modal words indicating regulation of cognition

For the purpose of this study, the identification of modal language within responses were linked to Regulation of Cognition. A pragmatic approach of highlighting all modality within every response was not practical, as this information would not add value to the metacognitive profile data of the participants. Therefore, a ‘best fit’ approach in which only modal language that reflected metacognitive knowledge and regulative behaviour was adopted in the coding process. For example, the most relevant category for this discourse analysis is epistemic modality where the participant’s opinion is expressed primarily through the use of modal verbs. On the other hand, dynamic modality, where a participant relates a positive or negative situation within the text believed to be a ‘statement of fact’ beyond their personal opinion, and which is also found within many responses in this study, was not relevant to the purpose of the study and therefore was not identified in the analysis phase. At the same time there was no advantage identifying whether modal words used in a response were of a high, medium or low intensity.

Another issue impacting on the analysis of modal language in this study was the fact that modality often spreads over a clause. As mentioned, colour coding has been adopted to highlight language features as indicators of metacognitive strategy use; as also mentioned, this issue potentially complicates the colour-coding format. For example, a single word within a participant’s response may require multiple colours if the many language features are to be acknowledged. Therefore, the decision was made to limit the recognition of modal language

features to just modal verbs, auxiliary verbs and adverbs, as these are the most efficient grammatical indicators supporting the action of thinking, the primary purpose of this discourse analysis. In Figure 3.8 below is an example of the type of colour coding priorities undertaken.

Clause	Modal colour coding	Study Coding		
I don't think so	I don't think so	I don't think so	Justification: Refers to own capabilities, strengths and weaknesses (personal pronoun) External utterance suggest inner thinking before answering fully Use of modal language	

Figure 3.8. Discourse analysis colour coding sample.

3.5.4 Scoring Metacognitive Behaviours

Identified metacognitive behaviours were recorded on the Discourse Analysis Frame (DAF) master (Figure 3.4). The design involved integrating Whitebread et al.'s (2007) C.Ind.Le Coding Scheme with the tasks of this study (Appendix D). *High quality* examples of Metacognitive Knowledge (KoC) demonstrated one or more of the following:

- i. Knowledge of Self: exhibited through the declaration of a personal opinion at the start of answering, e.g. "I think ..." or "I'm not sure ...".
- ii. Knowledge of Task: demonstrated by reading the question out loud and answering it revealing an understanding of the basic requirement of the task.
- iii. Knowledge of Strategies: exhibited through an elaborated answer, relying on both textual support, and personal analysis. This element is also evident through the knowledge and application of metalanguage in answering the question (highlighted pink).

High quality metacognitive regulation (RoC) responses needed to demonstrate one of the following:

- i. Planning strategies were identified by
 - a. external utterances (blue)
 - b. pauses suggesting inner thinking (blue dash)
- ii. Self monitoring behaviour as a regulation strategy was evident through the application of:
 - a. self-commentary (mauve)
 - b. detection of errors during the answer (turquoise)
- iii. Control of responses that enhanced clarity of meaning were evident through:
 - a. Self correction (maroon)
 - b. repetition (green) used to enhance clarity of meaning
 - c. modal language reflecting purposeful language to express thoughts (highlighted orange)

3.6 Limitations Within the Data Analysis Procedures

The limitations of the colour-coding scheme of the DAF have been discussed at length in section 3.5.3. Another limitation for the Primary Study from the data collection and analysis perspective was the absenteeism of some participants during data collection days. Despite the schools themselves nominating the timeframe for this study, it coincided with the busy end-of-year schedules that included excursions, concert rehearsals and swimming courses. Where possible, only those participants who completed all elements of the study were included in the discourse analysis sections in Chapters 5 to 8. However, as this study only focused on a relatively small number of participants, it has been necessary to include limited data for some groups. This will be discussed further in the following chapters.

3.7 Conclusion

This chapter has described the methodology, data collection and discourse analysis procedures undertaken to meet the purpose of the current study. It has also discussed limitations of the methodology and data collection process within the context of significant components of the present study. The next chapter will overview the data collected, and detail the analysis procedures that enabled identification of high and low quality critical literacy responses, and metacognitive behaviours across each of the texts selected for this study.

CHAPTER FOUR: DISCOURSE ANALYSIS

4.1 Introduction

A pivotal aspect of this study has been the determination of critical literacy competency and observable metacognitive behaviours in young readers. This chapter will focus on how the discourse analysis of participant responses enabled analysis and comparison of these two separate elements.

As unique and separate constructs, it was necessary to conduct discourse analysis of critical literacy competency and metacognitive behaviours separately, and then to compare the data from each, to identify if relationships existed. By designing a unique Discourse Analysis Frame (DAF) (Figure 3.4) it was possible to conduct individual and separate analyses of responses for critical literacy competency and metacognitive behaviours, and then compare the results within the same DAF.

Chapter Three detailed the discourse analysis procedures used in this study for identifying metacognition in responses, such as using colour coding within the Discourse Analysis Frame to highlight evidence of knowledge and regulation of cognition. Examples of metacognitive discourse analysis are presented in the following sections. The focus of this chapter and the design of each section are based on five of the six McDaniel's (2006) critical literacy elements selected for this study. Study questions and the critical literacy purpose are presented within the context of each of the three texts. These are followed by a brief discussion looking at the elements required for a 'quality' or competent critical literacy answer. Examples of what constitutes a 'poor' response from a critical literacy perspective are also presented.

4.2 Analysing Critical Literacy Responses

Critical literacy competency in this current study was determined by focusing on the natural spoken language of the participants in their responses to the specially designed questions. When participants engage in the critical literacy code of a text (Janks, 1997) they offer a response that

reflects a ‘quality’ answer; in the context of this study this is an answer that reflects critical literacy competency. Poor responses were those deemed not to engage with the critical literacy code, despite guidance by the question design. The five McDaniel’s elements that guided the design of critical literacy questions were:

1. Questions Power – dominance and submission
2. Identifying unspoken messages of the text
3. Questioning absence / gaps / silences in the text
4. Identifying similarities with other texts
5. Consideration of influence of own experiences and/or culture

4.3 Questions Power: Dominance and Submission

4.3.1 *Questions Power: Poem ‘Air Raid’ (Poem in Appendix F)*

Two questions were designed to assess understanding of issues of power in this poem.

Question 4: Does anyone or anything have control in this situation?

Question 5: Who does not have control?

These questions required participants to look beyond the literal meaning of the text, and to understand the personification and hyperbole literary techniques used by the author to determine meaning and power relationships. In this text the author puts the ‘control’ or power into the readers’ hands, showing readers the need to eliminate plastic bags and pollution from the planet. The language of the text was levelled at Stage 2; however, the language features made comprehension more challenging.

4.3.1.1 *Quality critical literacy responses and metacognitive behaviours*

Competent critical literacy responses for this question required evidence of multiple or single critical literacy elements in which participants’ responses reflected self, text or world knowledge, as a result of understanding the literacy devices that delivered the intended message of the author.

Metacognitive Knowledge		POEM Q4 <i>Does anyone or anything have power and control in this situation?</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		External utterance suggest inner thinking before answering fully	Plan
KoT	Completes requirements of task i.e. reads question and answers it	✓	Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 23		<i>Response:</i> We do, everyone in the world does, so we can all kind of help, do our little thing to stop it from happening.	Self-corrects	Control
Knowledge of Cognition			Repeats a strategy to check accuracy	
9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events to support answer [Declarative]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			✓ Use of modal language	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	
[1] Questions Power & [5] Own experiences				

Figure 4.1. Competent critical literacy response to Questioning Power[Ronald 12 years old Year

6].

Ronald's response in Figure 4.1 reflects his understanding of the literary devices and the intended message of the text and draws on his own experiences of shared responsibility in preventing pollution. Metacognitively, the linking of associations between elements reflects connotative knowledge. There is little external evidence of regulation of cognition in this answer; rather there is a level of confidence and conviction in Ronald's response. As the task demands are met, the assumption is made that Ronald implicitly has the necessary strategies developed to the level of automaticity, reflective of a high functioning reader.

Metacognitive Knowledge		POEM Q4 Does anyone or anything have power and control in this situation? <i>Response:</i> People can have control, but people don't – but people don't – most people don't do – do what they say.	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		✓ External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Monitor
KoS	Elaborates / draws on text evidence to support		✓ Self-corrects Control
	Uses metalanguage in answer	✓	✓ Repeats a strategy to check accuracy ✓ Use of modal language
WORD COUNT: 18			
Knowledge of Cognition		Regulation of Cognition	
9.7 Declarative knowledge evident through observed domain knowledge and cognitive knowledge 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events to support answer [Declarative]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident).	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer
		Clear opinion offered with justification	

Figure 4.2. Competent critical literacy response to Questioning Power[Lee 7 years old, Year 2].

Figure 4.2 presents Lee, a Year 1 *Talented Reader*, who offers a quality response that demonstrates his ability to understand the textual devices used by the author and to uncover the message of the text, by reflecting on his self, and world knowledge about pollution. This response also reflects a level of synthesis and consequent judgement of the actions of some members of the community. Metacognitive behaviours are more obvious in this response than in the previous example with Lee using pausing that suggests cognitive processing, repetition and modal language to monitor and control his response.

4.3.1.2 Poor quality critical literacy responses and metacognitive behaviours

The following sample is considered a poor quality critical literacy response.

Metacognitive Knowledge		POEM Q4 Does anyone or anything have power and control in this situation? <i>Response:</i> No, I don't think so.	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	✓ External utterance suggest inner thinking before answering fully Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it	✓	Planning
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		Monitor
WORD COUNT: 5			Control
Knowledge of Cognition 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.33 Evidence of external utterances reflecting inner thinking and / or pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer Opinion offered without justification

Figure 4.3. Poor quality critical literacy response to Questioning Power[Michael 7 years old,

Year 1].

Michael's response in Figure 4.3 shows either he did not understand the question, or he was not able to make the connections between the textual features and the intended message of the poem. There is, however, some indication of metacognitive processing as he refers to his own ability through the employment of the personal pronoun, completes the requirements of the task, and refers to his own cognition through employing the verb 'think' in his response.

4.3.2 Questions Power: Picture Book 'The Rabbits' (Appendix F)

Two questions were designed to assess participants' understanding of power in the picture book. These questions were:

Question 6: Who has the power or control in this story? Why do you think this?

Question 7: Who does not have power or control in this story? Why do you think this?

There were two appropriate responses to these questions from a critical literacy perspective. The first would identify the power inequity between the rabbits and the numbat characters of the text. The second, and more advanced response would identify the metaphorical representation of the rabbit and numbat characters as the British settlement of Australia. Both questions also required

justification of the answer within the response through the additional question, *why do you think this?*

4.3.2.1 Quality critical literacy responses and metacognitive behaviours

Figure 4.4 shows an example of a quality critical literacy response to Question 6. While Sarah, from the *Talented Readers Group*, has not identified the underlying metaphor of British settlement, she has recognised that power and control is owned by one set of characters in the story. In this response Sarah has shown evidence of all the Knowledge of Cognition (KoC) elements identified for observation and many of the Regulation of Cognition (RoC) elements. She has used the language of the question in her answer, cognitive pausing and modality of language that demonstrates a considered response that is drawing on the evidence of the text and meeting the goals of the task. She has also made a personal connection with the text using the pronoun ‘we’ showing empathy with the powerless characters.

Metacognitive Knowledge		PICTURE BOOK Q6 <i>Who has the power or control in this story? Why do you think this?</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses (Pink)	Response: think – that the rabbits have control and power in the story because on earth they’re taking everything , and we can’t do anything – yeah.	✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it		✓ Cognitive processing evident via pausing	
KoS	Elaborates / draws on text evidence to support		✓ Self- commentates	Monitoring
	Uses metalanguage in answer		✓ Detection of error/s during answer	
WORD COUNT: 24			✓ Self-corrects	
Knowledge of Cognition			✓ Repeats a strategy to check accuracy	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.6 Self-appraisal evident in self-commentary shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident). 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one’s knowledge / understanding of the requirements of the task.		Control
Multiple Critical Literacy elements explored		Single Critical Literacy element explored Clear opinion offered with justification [1] Questions Power	Poor Critical Literacy quality answer	

Figure 4.4. Competent critical literacy response to Questioning Power [Sarah 8 years old, Year 2].

4.3.2.2 Poor quality critical literacy responses and metacognitive behaviours

Figure 4.5 demonstrates a poor quality response to Question 7. The supposition is made that Bradley from the *Typical Readers Group*, has taken a literal interpretation of the text in saying that he does not have control in the story, and that it is not true. As his intent of this response is unclear, it is marked as a poor response. Bradley has shown evidence of cognitive pausing and therefore, some reflection and consideration during the answer. The inclusion of the personal pronoun, suggests some understanding of his own capabilities, but the lack of clarity in the response places doubt on the level of Bradley's self-knowledge.

Metacognitive Knowledge		PICTURE BOOK Q7: Who does not have power or control in this story? Why do you think this?	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		✓ External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it		Cognitive processing evident via pausing Monitoring
KoS	Elaborates / draws on text evidence to support		Self- commentates Control
	Uses metalanguage in answer	Me, I don't—cause the story isn't true. Sooo—that's all	Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language
WORD COUNT: 11			
Knowledge of Cognition		Regulation of Cognition	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task].		9.33 Evidence of pauses reflective of cognitive processing before or during the response 9.6 Self-appraisal evident in self-commentary shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	
		<i>Poor Critical Literacy quality answer</i>	
		Intent of answer is unclear	

Figure 4.5.Poor quality critical literacy response to Questioning Power[Bradley 8 years old, Year 2]

4.3.3 Questions Power: Short Story 'Little Red' (Appendix F)

Two questions were designed to assess participants' understanding of power in the short story. These questions were:

Question 7: Who has power or control in this story? Why do you think this?

Question 8: Who does not have power or control in this story? Why do you think this?

These questions required participants to recognise the initial control of the more physically powerful wolf character that was later usurped by a different type of power. The second type of

power, owned by the protagonist, encompasses problem solving skills and mutual respect, and dominates physical power in this story. The need for participants to justify their responses was reinforced through the second half of the question *why do you think this?*

4.3.3.1 Quality critical literacy responses and metacognitive behaviours

Figure 4.6 shows Allan, from the *Possible Talented Readers Group*, giving a competent response that shows solid understanding of the issue of power in the story and identifying a more complex understanding of the concept. This response demonstrates an understanding of the relationships of characters within the story and how power was used by one character over another. This response also shows a high level of metacognitive behaviours, both KoC and RoC, which demonstrates his understanding of the need and goals of the task, and his own ability to meet those goals. There is a solid understanding of metalanguage as well as a need to modify his language to ensure clarity of what he is trying to communicate in his answer.

Metacognitive Knowledge		SHORT STORY Q7 <i>Who has the power or control in this story? Why do you think this?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	✓ External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing Monitoring
KoS	Elaborates / draws on text evidence to support	✓	✓ Self- commentates ✓ Detection of error/s during answer
	Uses metalanguage in answer	✓	✓ Self-corrects ✓ Repeats a strategy to check accuracy Control Use of modal language
WORD COUNT: 42		<i>I think Little Red has power in this story— because — it's the main character —he, is the main character—and he's the one that — tricked — tricked the wolf and all that — so that's why I think he had power in the story..</i>	
Knowledge of Cognition		Regulation of Cognition 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.26 Task sensitivity reflected through an elaborated answer demonstrates knowledge of appropriate and applicable strategies and subsequent strategy application in completing the task [Procedural / Strategy]	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored [1] Questions Power	
Poor Critical Literacy quality answer			

Figure 4.6.Competent critical literacy response to Questioning Power [Allan 9years old, Year 3]

4.3.3.2 Poor quality critical literacy responses and metacognitive behaviours

The example in Figure 4.7 is classified as a poor response such because there is no justification for the answer, even though an answer has been given. By not justifying her answer, Alana, from the *Typical Reader Group*, has not shown that she fully understands what the

question is asking. There is a chance that she does not understand the concept of ‘control’ in the context of this critical literacy question. Metacognitively, there is strong evidence that she is aware of her own capabilities to answer this question with the clear statement “I don’t know”. There is evidence that she has tried to reflect on the answer through ‘thinking’ utterances and cognitive pausing; however, her answer does not fulfil the requirements of the task.

Metacognitive Knowledge		PICTURE BOOK Q7: Who does not have power or control in this story? Why do you think this? Response: Well think Little Red and I think is because I don't know, ... because the story really made me think	Metacognitive Regulation		
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		✓ External utterance suggest inner thinking before answering fully	Planning	
KoT	Completes requirements of task i.e. reads question and answers it		Cognitive processing evident via pausing	Monitor	
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		Self- commentates Detection of error/s during answer	Control	
WORD COUNT: 11			Self-corrects Repeats a strategy to check accuracy		
Knowledge of Cognition 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. understanding specific to a literacy-based task [Procedural / Task].			Use of modal language		
Multiple Critical Literacy elements explored			Regulation of Cognition 9.33 Evidence of pauses reflective of cognitive processing before or during the response applicability		
Single Critical Literacy element explored				Poor Critical Literacy quality answer	
				Answer without justification	

Figure 4.7. Poor Criticalliteracy response to Questioning Power [Alana 8 years old, Year 3].

4.4 Identifying Unspoken Messages In The Text

4.4.1 Identifying Unspoken Messages: Poem ‘Air Raid’

One question was designed to assess participants’ identification of unspoken or underlying messages in the poem:

Question 6: Is there a message in this poem?

This question required participants to look beyond the literal meaning within the poem and identify the underlying message; that being, the damage that plastic bags create in the environment.

4.4.1.1 Quality critical literacy responses and metacognitive behaviours

There were no poor responses to this question, suggesting that all participants in this study had good knowledge of environmental issues. Sustainability units of work in Science and HSIE

are evident in both schools' programs, and this is likely to have had a positive impact on each participant's ability to identify the unspoken message of the poem.

Figure 4.8 presents a competent critical literacy response from Jacob a *Possibly Talented Reader* that exhibits multiple elements including identifying the underlying message of the poem, and evidence from his own life experiences. The response is a passionate one utilising emotive language to express his concerns about pollution. This question has elicited a response from Jacob that might be considered by Morgan (1997) as demonstrating 'potentially active citizenship'. Jacob has clearly connected with the underlying message of the text, his own experiences and worldviews.

Metacognitive Knowledge		POEM Q6 <i>Is there a message in this poem?</i>	Metacognitive Regulation	
KoP	KoT		Planning	Monitoring
Refers to own capabilities, strengths and weaknesses .(Pink)			✓ External utterance suggest inner thinking before answering fully	
	Completes requirements of task i.e. reads question and answers it	Response: There's a message in this poem – to yell – it's just staring us in the face – the whole poem is telling us to stop using plastic bags and stop littering so much.	Cognitive processing evident via pausing	
KoS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 32			Self-corrects	
Knowledge of Cognition			Repeats a strategy to check accuracy	
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (beliefs about thinking). 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			✓ Use of modal language	
Regulation of Cognition				
9.33 Evidence of pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.				
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
[2] Underlying message & [5] Own experiences				

Figure 4.8.Competent critical literacy response to Underlying Message [Jacob 11years old, Year 5].

4.4.2 Identifying Unspoken Messages: Picture Book '*The Rabbits*'

Three questions were designed to assess participants' identification of unspoken or underlying messages in the picture book. Two of these questions were selected for discourse analysis:

Question 12: Why do you think the author wrote this story?

Question 13: What do you think is the author's opinion about the situation this story tells us about?

These questions required participants to identify the author's intent and opinion about the situation in the picture book. At a minimal level, participants should have been able to identify the inequality of the character groups within the story. Participants with knowledge of Australian history may have identified the unspoken analogy of British settlement of Australia.

4.4.2.1 Quality critical literacy responses and metacognitive behaviours

The youngest participant to identify this analogy was Heather in Year 2, a *Talented Reader* (see Figure 4.9). The expression 'took over' indicates Heather's growing awareness of some of the issues associated with settlement of a country. She has made the connection between the rabbit caricatures with the English settlers. The reply is simplistic as might be expected from a very young person, and likewise void of judgement or opinion about the act. This is starkly contrasted by Ronald's response in Figure 4.10.

Metacognitive Knowledge		PICTURE BOOK Q12 <i>Why do you think the author wrote this story?</i> <i>Response:</i> Oh I think he wanted to write it so to tell a funny version and base it on - when English – when English people took over Australia.	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalanguage in answer	✓	Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language	Control
WORD COUNT: 26		Knowledge of Cognition 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task].		
		Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.		
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
		Clear opinion offered with justification		

Figure 4.9.Competent critical literacy response to Underlying Message [Heather 8 years old, Year 2].

Metacognitive Knowledge		PICTURE BOOK Q12 <i>Why do you think the author wrote this story?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	<i>Response:</i> To – ah – remember and retell the – the horrible things that have happened in history, what we did to the Aborigines – yeah.	✓ External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing ✓ Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it		Planning
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		Monitor
WORD COUNT: 21			Control
Knowledge of Cognition 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Process monitoring is evident through self-commentary, confirming answer to self.	
Multiple Critical Literacy elements explored [2] Underlying message & [5] Own experiences		Single Critical Literacy element explored	Poor Critical Literacy quality answer

Figure 4.10. Competent critical literacy response to Underlying Message [Ronald 12yrs old Year 6].

This response has scored more strongly than Heather's, exploring 'multiple critical literacy elements' as Ronald has given an answer that uses strong emotive language clearly situating his knowledge, understanding and opinion of the historical event. He has personalised his response by using the pronoun 'we' identifying those who, in his opinion, are at fault. Metacognitively there are some indicators that show KoC and RoC.

Metacognitive Knowledge		PICTURE BOOK Q13: <i>What do you think is the author's opinion about this situation this story tells us about?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	<i>Response:</i> I think the author's opinion is – we're making it harder for the animals – we shouldn't do this, we shouldn't do that to animals.	✓ External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it		Planning
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		Monitor
WORD COUNT: 23			Control
Knowledge of Cognition 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task].		Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language and repetition to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task. 9.43 Internal verbalisation expressed externally includes personal beliefs	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored Clear opinion offered with justification	Poor Critical Literacy quality answer

Figure 4.11. Competent critical literacy response to Underlying Message [Sarah 8years old, Year 2].

Sarah's response in Figure 4.11 addresses the text at a literal level; however, there is a strong sense of empathy shown for the animals in the story. She clearly identifies what she sees as an injustice to animals and offers a strong, justified personal opinion. For this reason it is considered a response that demonstrates critical literacy competency, appropriate for a Year 2 student. It also reflects a level of compassion that might be expected from a Talented Reader like Sarah, with her employment of modal language and repetition to enforce her response. This response is also an example of metacognitive regulation where there has been an external verbalisation of one's personal beliefs.

4.4.2.2 Poor quality critical literacy responses

The poor responses to these questions once again presented answers that lacked justification of opinion, where intent was unclear, or the participant was unable to answer the question.

4.4.3 Identifying Unspoken Messages: Short Story 'Little Red'

Two questions were designed to assess participants' identification of unspoken or underlying messages in the short story. One of these questions was selected for discourse analysis:

Question 15: Why do you think the author wrote this story?

This question required participants to identify a number of unspoken messages of the text. These included inequality between characters to control their circumstances, and the advantage of negotiation, rather than overt and dominating power play.

4.4.3.1 Quality critical literacy responses and metacognitive behaviours

This proved a difficult question for many participants; however, with the exception of two, those who answered this question gave a justified response and therefore scored well due to this quality. Many believed the author wrote the story to entertain. This response is in line with the National literacy syllabus. The following two examples show two different approaches.

Metacognitive Knowledge		SHORT STORY Q15 <i>Why do you think the author wrote this story?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	<i>Response:</i> Well, I think he wrote the story to show the little kids or kids that you should follow your parents rules, because like, the mum said – um - don't walk off the path and Little Red walked off the path so it probably- and there was consequences for that - so, the author probably wrote the story to show everything really has a consequence, good or bad	✓ External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects ✓ Repeats a strategy to check accuracy ✓ Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it		Planning
KoS	Elaborates / draws on text evidence to support		Monitoring
	Uses metalanguage in answer		Control
WORD COUNT: 31			
Knowledge of Cognition		Regulation of Cognition	
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (beliefs about thinking). 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task].		9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language and repetition to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer
[2] Underlying message			

Figure 4.12. Competent critical literacy response to Underlying Message [Hayley 11 years old, Year 5].

In Figure 4.12 Hayley, a *Talented Reader*, presents a well-justified response linking the text with the underlying message of consequences of actions. She has employed a number of observable metacognitive behaviours to ensure a level of accuracy with her meaning.

Metacognitive Knowledge		SHORT STORY Q15 <i>Why do you think the author wrote this story?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	<i>Response:</i> As a parody of Little Red Riding Hood	External utterance suggest inner thinking before answering fully Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it		Planning
KoS	Elaborates / draws on text evidence to support		Monitoring
	Uses metalanguage in answer		Control
WORD COUNT: 8			
Knowledge of Cognition		Regulation of Cognition	
9.19 Implicit, automatic refined strategies / skills due to familiarity of task exhibited by confident and detailed response (without reference to personal capabilities) [Procedural]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer
[2] Underlying message			

Figure 4.13. Competent critical literacy response to Underlying Message [Ronald 12years old, Year 6].

On the other hand, in Figure 4.13, Ronald demonstrates little observable metacognitive behaviour with his confident response that succinctly demonstrates his advanced understandings of literary techniques. While ‘parody’ may have been discussed in Stage 3 English content, it is not a term commonly used until the Stage 4 and 5 English syllabuses.

4.4.3.2 Poor Quality critical literacy responses and metacognitive behaviours

Only two responses did not score for this question, and both did not know how to answer this question.

4.5 Questions Absences / Gaps / Silences

4.5.1 Questions Absence/Gaps/Silences: Poem ‘Air Raid’

There were no absence/gaps/silences questions designed for the poem, as the text did not lend itself well to this concept for young readers.

4.5.2 Questions Absence/Gaps/Silences: Picture Book ‘The Rabbits’

Two questions were designed to assess participants’ ability to identify absences/gaps/silences in the picture book. One was selected for discourse analysis:

Question 8: Is there anyone in this story who should have a say, but does not?

This question was challenging as the story is told from the ‘powerless’ character’s point of view. As earlier questions seek identification of inequality within the text, this question required a deeper level of analysis, first identifying to whom the voice belonged, and second identifying the antagonist silenced by the author. This was a particularly challenging question for those students who had identified the English settlement analogy, as they may focus on the real world understandings of powerlessness of Indigenous peoples, without realising the story is being told from their perspective.

4.5.2.1 Quality critical literacy responses and metacognitive behaviours

One participant identified silenced characters within the story, such as the children, in addition to the powerless numbat characters.

Metacognitive Knowledge			PICTURE BOOK Q8: <i>Is there anybody in the story who should have a say but does not?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		<i>Response:</i> Yes, the children do not have a say about being taken away and the native animals do not have a say about, you know the rabbits coming in and taking over –and yeah but particularly the children	External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing ✓ Self- commentates Detection of error/s during answer Self-corrects ✓ Repeats a strategy to check accuracy ✓ Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it	✓		Planning Monitoring Control
KoS	Elaborates / draws on text evidence to support	✓		
	Uses metalanguage in answer	✓		
WORD COUNT: 8				
Knowledge of Cognition 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			Regulation of Cognition 9.33 Evidence of pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language and repetition to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	
		[3] Gaps/ silences		

Figure 4.14. Competent critical literacy response to Underlying Message [Bonnie 12years old, Year 6].

A number of older participants were able to rectify their understanding of the historical act and identify the concept of silence in the text, by focusing on the real-world context and the lack of voice of the Aboriginal people. To accomplish this, the participants had to focus on real work events rather than on what was happening in the story. An example is presented in Figure 4.15.

Metacognitive Knowledge			PICTURE BOOK Q8: <i>Is there anybody in the story who should have a say but does not?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		<i>Response:</i> The Aborigines should have a say in what happens to the country they owned, but they didn't get it.	External utterance suggest inner thinking before answering fully Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy ✓ Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it	✓		Planning Monitoring Control
KoS	Elaborates / draws on text evidence to support			
	Uses metalanguage in answer	✓		
WORD COUNT: 19				
Knowledge of Cognition 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			Regulation of Cognition 9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	
[3] Absences / gaps & [5] Own experiences				

Figure 4.15. Competent critical literacy response to Underlying Message [Ronald 12 years old. Year 6].

Some participants identified that while the story may have been told from the voice of powerless characters, they did not have a voice within the situation being presented in the text.

An example of this type of answer is shown in Figure 4.16. Other participants identified a lack of ‘voice’ by the telling of the story from the numbats or the powerless characters’ point of view such as shown in Figure 4.17. All of these different perspectives were scored as quality responses as they reflected thoughtful justification.

Metacognitive Knowledge		PICTURE BOOK Q8: <i>Is there anybody in the story who should have a say but does not?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	✓ External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing ✓ Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy ✓ Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it	✓	Planning
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer	✓	Monitor
WORD COUNT: 19			
Knowledge of Cognition		Regulation of Cognition	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Evidence of pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language and repetition to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored [3] Gaps/ silences	
Poor Critical Literacy quality answer			

Figure 4.16. Competent critical literacy response to Underlying Message [Simon 12 years old, Year 6].

Metacognitive Knowledge		PICTURE BOOK Q8: <i>Is there anybody in the story who should have a say but does not?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	✓ External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing ✓ Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy ✓ Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it	✓	Planning
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer	✓	Monitor
WORD COUNT: 19			
Knowledge of Cognition		Regulation of Cognition	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Evidence of pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language and repetition to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored [3] Gaps/ silences	
Poor Critical Literacy quality answer			

Figure 4.17. Competent critical literacy response to Underlying Message [Cooper 10 years old, Year 5].

With the exception of Ronald's response (Figure 4.15), all of these samples demonstrate similar metacognitive behaviours. Ronald's responses indicate that the tasks in this study may not be as challenging for him as for other participants. There is a high level of automaticity suggested in his responses, suggesting that he is at a more advanced level compared with the other participants, and that many of his metacognitive processes are internalised and therefore not visible. This will be discussed further in Chapter Seven.

4.5.2.2 Poor quality critical literacy responses and metacognitive behaviours

As explained above, due to the difficulty of the concept there were a number of poor responses to this question, mainly from the younger participants and the typical readers across the study. Each of these poor responses indicated that the participant was not able to answer the question.

4.5.3 Questions Absence/Gaps/Silences: Short Story 'Little Red'

One question was designed to assess participants' ability to identify absences/gaps/silences in the short story.

Question 10: Is there anyone's point of view missing from this story?

These questions required participants to identify any situations that were not discussed in the story and that may have illuminated characters' actions more clearly. It was also an opportunity for them to make links between the plot and the telling of the story.

4.5.3.1 Quality critical literacy responses and metacognitive behaviours

Most responses identified the wolf's point of view as missing in this text, and many also identified minor characters such as the parents and travellers as being silenced. This indicates a literal understanding of the concept rather than identifying gaps resulting from the purpose of the writing by the author. Isla's answer to this question (Figure 4.18) demonstrates her understanding of how absences and gaps in story telling can change perspective.

Metacognitive Knowledge			SHORT STORY Q10 <i>Is there anyone's point of view missing from the story?</i>	Metacognitive Regulation		
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		<i>Response:</i> Grandma's. Um – and wolf's – because if the wolf had of, it would have made it sound more sympathetic. Whereas Little Red with Little Red's opinion it kind of made it look like the wolf was evil.	External utterance suggest inner thinking before answering fully	Planning	
KoT	Completes requirements of task i.e. reads question and answers it			Cognitive processing evident via pausing	Monitor	
KoS	Elaborates / draws on text evidence to support			Self- commentates	Control	
	Uses metalanguage in answer			Detection of error/s during answer		
WORD COUNT: 36				Self-corrects		
				Repeats a strategy to check accuracy		
				Use of modal language		
Knowledge of Cognition				Regulation of Cognition		
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].				9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task.		
9.8 Connotative knowledge evident through associations being made between elements i.e. utilising the text to support answer [Declarative].				9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.		
9.15 Complexity and appropriateness of response and / or drawing on the text to support conclusions demonstrate an understanding, reflection and awareness of the value and transferability of a variety of strategies in various contexts and tasks [Declarative / Strategy].						
Multiple Critical Literacy elements explored		Single Critical Literacy element explored		Poor Critical Literacy quality answer		
		[3] Absences / gaps				

Figure 4.18.Competent critical literacy response to Underlying Message [Isla 10 years old, Year 5].

4.5.3.2 Poor quality critical literacy responses and metacognitive behaviours

Poor responses for this question included answers that were not justified such as Bradley's in

Figure 4.19, or a general inability to answer the question.

Metacognitive Knowledge			SHORT STORY Q10 <i>Is there anyone's point of view missing from the story?</i>	Metacognitive Regulation		
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		<i>Response:</i> Yes	External utterance suggest inner thinking before answering fully	Planning	
KoT	Completes requirements of task i.e. reads question and answers it	✓		Cognitive processing evident via pausing	Monitor	
KoS	Elaborates / draws on text evidence to support			Self- commentates	Control	
	Uses metalanguage in answer			Detection of error/s during answer		
WORD COUNT: 1				Self-corrects		
Knowledge of Cognition				Repeats a strategy to check accuracy		
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].				Use of modal language		
Multiple Critical Literacy elements explored		Single Critical Literacy element explored		Poor Critical Literacy quality answer		
				Intent of answer is unclear		

Figure 4.19.Competent critical literacy response to Underlying Message [Bradley 8 years old, Year 2].

Bradley, a *Typical Reader*, has also demonstrated very few metacognitive behaviours in this response. Because the question has not asked for justification of the answer, he has completed the task required and therefore scored in the Knowledge of Tasks category.

4.6 Identifying Similarities With Other Texts

4.6.1 Similarities with other texts: Poem ‘Air Raid’

One question was designed to assess participants’ ability to identify similarities between the poem and other texts.

Question 9: Why do you think the author used this title for the poem?

This question required participants to make connections between the title of the poem and real-world events. There were no clues in the poem as to why the author chose this title; therefore, participants needed to rely on making connections between the text and world knowledge, or deconstructing the words ‘air raid’ while keeping in mind the content of the poem, to be able to successfully answer this question.

4.6.1.1 Quality critical literacy responses and metacognitive behaviours

The two responses below made the connections between the theme of the poem and real-world events. The youngest participants who successfully made the necessary connections were both in Year 4; Bob, a *Talented Reader*, in Figure 4.20 and Leila a *Typical Reader* in Figure 4.21. In both examples metacognitive behaviours are not easily observed in these responses, other than completing the task and using some regulatory behaviours to modify meaning.

Metacognitive Knowledge			POEM Q10 <i>Why do you think the author used this title for the poem?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		<i>Response:</i> Because it's about something getting conquered by air. Things that conquering are in the air. It's called air raid, because we're getting conquered by things that are in the air.	External utterance suggest inner thinking before answering fully Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects ✓ Repeats a strategy to check accuracy Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it	✓		Planning
KoS	Elaborates / draws on text evidence to support	✓		Monitor
	Uses metalanguage in answer			Control
WORD COUNT: 1				
Knowledge of Cognition 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			Regulation of Cognition 9.33 Use of repetition to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
		Identifies similarities between texts		

Figure 4.20. Competent critical literacy response to Identifying Similarities [Bob 9 years old, Year 4].

Metacognitive Knowledge			POEM Q10 <i>Why do you think the author used this title for the poem?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		<i>Response:</i> Because, it's sort of like airplanes, or an air raid, of plastic and stuff.	External utterance suggest inner thinking before answering fully Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects ✓ Repeats a strategy to check accuracy Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it	✓		Planning
KoS	Elaborates / draws on text evidence to support			Monitor
	Uses metalanguage in answer			Control
WORD COUNT: 1				
Knowledge of Cognition 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			Regulation of Cognition 9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
		Identifies similarities between texts		

Figure 4.21. Competent critical literacy response to Identifying Similarities [Leila 9 years old, Year 4].

4.6.1.2 Poor quality critical literacy responses and metacognitive behaviours

Many participants were unable to answer this question because they were unable to make the connections necessary to answer this question, and stated they did not know the answer.

4.6.2 Similarities with other texts: Picture Book 'The Rabbits'

Two questions were designed to assess participants' ability to identify similarities between the picture book and other texts. One of these questions was selected for discourse analysis:

Question 3: Have you read, seen or heard about a story like this before? Explain.

This question required participants to make direct connections between the text and world knowledge by identifying the metaphor of the book that represented British settlement in Australia. To score a quality response, participants needed to also justify their answers.

4.6.2.1 Quality critical literacy responses and metacognitive behaviours

Noah, a *Talented Reader*, gave a response that demonstrated how he identified the connections between the images and plot to real world events. While the discussion is prolonged and somewhat convoluted, it is an excellent example of cognitive processing, problem solving and connection making, in a young reader.

Metacognitive Knowledge		PICTURE BOOK Q3 <i>Have you read, seen or heard about a story like this before? Explain.</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	Response: Well, sort of – except not exactly because like, I've heard that that, I've learnt about stuff like – for example, in history this is a bit like– all the rabbits is a bit like, a bit like English people that migrated to Australia cause first there were, well, first there were the Aboriginals which like them (points to book)are like them are the many grandparents ago. Then comes the rabbits and they take over well that was like all the people and then bringing all the stuff and everything and all those rabbits bringing all the stuff and everything– that's like all the people from the other countries, bringing in their animals, and, and stuff like that.	✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it		✓ Cognitive processing evident via pausing Self- commentates Detection of error/s during answer	Monitor
KS	Elaborates / draws on text evidence to support Uses metalanguage in answer		✓ Self-corrects Repeats a strategy to check accuracy ✓ Use of modal language	Control
WORD COUNT: 1				
Knowledge of Cognition 9.6 Self-appraisal evident in self-commentary shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability 9.7 Declarative knowledge evident through observed domain knowledge and cognitive knowledge 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.15 Complexity and appropriateness of response and / or drawing on the text to support conclusions demonstrate an understanding, reflection and awareness of the value and transferability of a variety of strategies in various contexts and tasks [Declarative / Strategy]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			Regulation of Cognition 9.33 Goal specification and planning demonstrated through process monitoring, monitoring clarity and accuracy through cognitive pausing, expression of thought, detection of errors, self-correction &/or repetition and the use of modal language to modulate expression and ideas expressed.	
Multiple Critical Literacy elements explored [4] Identifies similarities between texts [5] Own experiences		Single Critical Literacy element explored	Poor Critical Literacy quality answer	

Figure 4.22. Competent critical literacy response to Identifying Similarities [Noah 8 years old, Year 2].

Older students like Cooper, a *Talented Reader* (see Figure 4.23), were able to make the connections more succinctly than the younger students. Cooper's response is confident and, as such, does not give an opportunity to observe his regulatory processes using the elements from this Discourse Analysis Frame. This is another example of where this DAF proves inadequate for identifying non-visible metacognitive behaviours or automaticity.

Metacognitive Knowledge		PICTURE BOOK Q3 <i>Have you read, seen or heard about a story like this before? Explain.</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	External utterance suggest inner thinking before answering fully
KoT	Completes requirements of task i.e. reads question and answers it	✓	Cognitive processing evident via pausing
KoS	Elaborates / draws on text evidence to support	✓	Self- commentates
	Uses metalanguage in answer	✓	Detection of error/s during answer
WORD COUNT: 1		<p>Knowledge of Cognition</p> <p>9.6 Self-appraisal evident in self-commentary shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability</p> <p>9.7 Declarative knowledge evident through observed domain knowledge and cognitive knowledge</p> <p>9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative].</p> <p>9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task].</p> <p>9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].</p>	<p>Regulation of Cognition</p>
Multiple Critical Literacy elements explored			
[4] Identifies similarities between texts [5] Own experiences		Single Critical Literacy element explored	Poor Critical Literacy quality answer

Figure 4.23. Competent critical literacy response to Identifying Similarities [Cooper 10 years old, Year 5].

4.6.2.2 Poor quality critical literacy responses and metacognitive behaviours

Poor responses were scored with unjustified answers, such as Steven's in Figure 4.24 below. There are few metacognitive behaviours observed in this answer apart from a brief reference to his own experiences linked to this question.

Metacognitive Knowledge			PICTURE BOOK Q3 <i>Have you read, seen or heard about a story like this before? Explain.</i>	Metacognitive Regulation		
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	<i>Response:</i> No I haven't.	External utterance suggest inner thinking before answering fully	Planning	
KoT	Completes requirements of task i.e. reads question and answers it			Cognitive processing evident via pausing	Monitor	
KS	Elaborates / draws on text evidence to support			Self- commentates		
	Uses metalanguage in answer			Detection of error/s during answer		
WORD COUNT: 1				Self-corrects		
Knowledge of Cognition 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person].				Repeats a strategy to check accuracy	Control	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>		<i>Poor Critical Literacy quality answer</i>		
				No justification given		

Figure 4.24. Competent critical literacy response to Identifying Similarities [Steven 7 years old, Year 1]

4.6.3 Similarities with other texts: Short Story ‘Little Red’

Two questions were designed to assess participants’ ability to identify similarities between the short story and other texts. One of these questions was selected for discourse analysis:

Question 1: Does this story remind you of another story? Do you know the name of the other story?

This question required participants to make connections between this modern text and the original fairytale. All participants were able to demonstrate this connection, although some did not give the details necessary to score as a quality response.

4.6.3.1 Quality critical literacy responses and metacognitive behaviours

Most quality responses made the connection between this text and the original fairytale. A small number of answers briefly elaborated, such as Isla presented in Figure 4.25.

Metacognitive Knowledge			SHORT STORY Q1: Does this story remind you of another story? Do you know the name of the other story?	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)			External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it		<i>Response:</i> Little Red Riding Hood. It's about the same – but the other one there's a hunter in it – in Little Red Riding Hood there's a hunter and also it's a girl, not a boy.	Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support			Self- commentates Detection of error/s during answer	
	Uses metalanguage in answer			Self-corrects Repeats a strategy to check accuracy Use of modal language	Control
WORD COUNT: 33					
Knowledge of Cognition			Regulation of Cognition		
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of repetition strategies to moderate or emphasise meaning.		
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	[4] Similarities	<i>Poor Critical Literacy quality answer</i>	

Figure 4.25. Competent critical literacy response to Identifying Similarities [Isla 10 years old, Year 5].

4.6.3.2 Poor quality critical literacy responses and metacognitive behaviours

The only poor responses to this question in this text were from the two youngest participants who simply answered ‘yes’ to the question. Without justification or details explaining this connection they were unable to score competency for this response.

4.7 Identifying Influences of Own Culture and/or Experiences

4.7.1 Influence of own culture/experiences: Poem ‘Air Raid’

Two questions were designed to assess if participants’ were able to consider the poem within the context of their own experiences or culture. One question was selected for discourse analysis:

Question 3: Could this really happen?

This question required participants to draw on their own experiences and cultural understandings about the effects of pollution on the planet. There were typically two types of approaches to this question that both scored as quality responses. The first was to read the underlying message of the poem and the second was to respond to it literally. Both responses scored as demonstrating critical literacy competency if clear justification was offered to support the stance. While an answer that responded to the text literally may not demonstrate higher order connections with the

text, a justification within the response reflected a participant's considerations of their own experiences of and with plastic bags.

4.7.1.1 Quality critical literacy responses and metacognitive behaviours

Figure 4.26 shows another example of a young reader attempting to work their way through the question drawing on evidence from their worldview understandings to come to an answer. While Michael claims he is unable to answer this question, it scores as a quality critical literacy response due to the connections explored in the answering process. Metacognitively, Michael is observed drawing on all the Metacognitive Knowledge elements established in this DAF. His regulatory behaviours are also significant as he attempts to find a solution to the problem presented.

Metacognitive Knowledge		POEM Q3: Could this really happen?	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support	✓	Self- commentates	Control
	Uses metalanguage in answer	✓	Detection of error/s during answer	
WORD COUNT: 33		Response: I'm not sure but – I'm not sure if this could happen or not – cause – um – pollution is getting pretty bad because of all the cars and people throwing cigarettes and paper bags everywhere, rubbish everywhere – but – I'm not sure if it could happen.		
Knowledge of Cognition		Regulation of Cognition 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
		[5] Own Experiences		

Figure 4.26. Competent critical literacy response to Own Experiences/Culture [Michael 7 years old, Year 1].

Metacognitive Knowledge		POEM Q3: <i>Could this really happen?</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it		Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support ✓		Self- commentates	Control
	Uses metalinguage in answer ✓	<i>Response:</i> Yes, it can really happen because people just throw plastic bags around they can – if you're near the sea they can go in the sea and catch, go in someone's (holds throat), fish's neck let's say and strangle them and drown or say a turtle could swallow it, they will die– um , and – people just throw everything on the ground, as I said, in all those places, so it can really hurt animals and it's littering as well.	Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy ✓ Use of modal language	
WORD COUNT: 33				
Knowledge of Cognition		Regulation of Cognition		
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of repetition and modal language strategies to moderate or emphasise meaning.		
<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>		
	[5] Own Experiences			

Figure 4.27.Competent critical literacy response to Own Experiences/Culture [Nathan 9 years old, Year 3].

Nathan's response in Figure 4.27 above shows a strong justification for his literal interpretation of the poem. He has drawn on this world knowledge and highlighted the plight of living creates, clearly demonstrating a quality critical literacy response. The answer also reflects a number of observable metacognitive knowledge and some regulatory behaviours.

Figure 4.28 shows an older participant's successful response to this question. Simon, a *Talented Reader*, recognises the text is not meant to be taken literally. He clearly justifies his answer and therefore it scores as a quality response. Most of the KoC behaviours are observed, but only two RoC behaviours evident in this response. Again, as a Year 6 student, it may be that a level of automaticity could explain this.

Metacognitive Knowledge		POEM Q3: Could this really happen?	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	Response: Nah –this couldn't really happen because, um , plastic bags aren't living, they haven't got a brain and they're not alive so they couldn't work together in any way.	Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support	✓	Self- commentates	
	Uses metalanguage in answer	✓	Detection of error/s during answer	
WORD COUNT: 33			Self-corrects	Control
Knowledge of Cognition			Repeats a strategy to check accuracy	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			✓ Use of modal language	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored [5] Own Experiences	Regulation of Cognition 9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of repetition and modal language strategies to moderate or emphasise meaning.	

Figure 4.28.Competent critical literacy response to Own Experiences/Culture [Simon 12 years old, Year 6].

4.7.1.2 Poor quality critical literacy responses and metacognitive behaviours

There were no poor scorings for this question. Once again, the familiar topic of pollution and environmental sustainability has given all participants the background knowledge to make connections between this text and their life experiences and understandings.

4.7.2 Influence of own culture/experiences: Picture Book ‘The Rabbits’

Four questions were designed to assess if participants' were able to consider the picture book within the context of their own experiences or culture. Two of these questions were selected for discourse analysis:

Question 4: Do you think this could really happen? Why do you think this?

Question 11: Is there anyone in the story who needs help? Explain.

These questions required participants to draw connections between the plot and their own life experiences. It was possible for responses to score as a quality answer even if links were not made with Indigenous issues in this country, if justification was offered for the point of view presented by the participant.

4.7.2.1 Quality critical literacy responses and metacognitive behaviours

Heather's response in Figure 4.29 has taken a literal approach to the story and she adamantly proclaims such a consideration to be unreasonable, sighting the costuming of the rabbit creatures as evidence. This is a quality response based on the parameters set by the discourse analysis of this study as she draws on evidence from the text and made connections to her own experiences. Heather has displayed significant metacognitive knowledge and regulatory behaviours in this response.

Metacognitive Knowledge		PICTURE BOOK Q: 4 <i>Do you think this could really happen? Why do you think this?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	Response: <i>I don't think it could happen because I don't think rabbits dressed up in all this suits and sail across from somewhere – and take food I just don't think it could happen. And they're all dressed up in suits and -they looked really weird – and yes, I don't think it could happen.</i>	<input checked="" type="checkbox"/> External utterance suggest inner thinking before answering fully <input checked="" type="checkbox"/> Cognitive processing evident via pausing <input type="checkbox"/> Self- commentates <input type="checkbox"/> Detection of error/s during answer <input type="checkbox"/> Self-corrects <input checked="" type="checkbox"/> Repeats a strategy to check accuracy <input checked="" type="checkbox"/> Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it		
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		
WORD COUNT: 33			
Knowledge of Cognition		Regulation of Cognition	
9.6 Self-appraisal evident in self-commentary shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task].9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of repetition and modal language strategies to moderate or emphasise meaning.	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>
		[5] Own Experiences	

Figure 4.29.Competent critical literacy response to Own Experiences/Culture [Heather 8 years old, Year 2].

Metacognitive Knowledge		PICTURE BOOK Q: 11 <i>Is there anyone in the story who needs help? Explain.</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	<i>Response:</i> The victims of the rabbits – because they obviously don't have a say, and they need help.	External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it		Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 33			Self-corrects	Control
Knowledge of Cognition			Repeats a strategy to check accuracy	
9.6 Self-appraisal evident in self-commentary shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			Use of modal language	
Multiple Critical Literacy elements explored [1] Questions Power [5] Own Experiences		Single Critical Literacy element explored	Poor Critical Literacy quality answer	

Figure 4.30. Competent critical literacy response to Own Experiences/Culture [Ava 11 years old, Year 6].

Ava, a *Possibly Talented Reader*, draws on multiple critical literacy understandings in her response to question 11 shown in Figure 4.30. She connects the need for help to being powerless in a situation. This may be another example of an older participant with developing automaticity as the KoC and RoC elements are difficult to observe.

4.7.2.2 Poor quality critical literacy responses and metacognitive behaviours

There were no responses that were not justified by participants in these questions, and therefore no poor quality scores.

4.7.3 Influence of own culture/experiences: Short Story ‘Little Red’

Two questions were designed to assess if participants’ were able to consider the short story within the context of their own experiences or culture. One of these questions was selected for discourse analysis:

Question 11: Is anyone treated unfairly in the story?

This question required participants to make connections with their own life experiences to explore bullying issues, although no participants in this study reflected on this issue. Responses

that identified unfair treatment of characters within the story were scored as quality answers.

Because the question did not ask for justification, this could not be used as an element to judge competency.

4.7.3.1 Quality critical literacy responses and metacognitive behaviours

The response from Audrey, a *Talented Reader* shown in Figure 4.31 was typical of most of the quality answers in this section. Identification of unfair treatment was limited to characters in the story. There is still an understanding of ‘unfairness’ drawn from life and cultural experiences evident in the answer and therefore it scores as a quality response. The level of confidence in this response makes it difficult to observe metacognitive regulatory behaviours, although metacognitive knowledge is clearer.

Metacognitive Knowledge		SHORT STORY Q11: Is anyone treated unfairly in the story?	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	Response: Yes, grandma is treated unfairly in this story because she gets eaten and she shouldn't be - but then she comes back, but she still got eaten	✓ Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support	Self- commentates Detection of error/s during answer	Control	
	Uses metalanguage in answer	Self-corrects		
WORD COUNT: 12			Repeats a strategy to check accuracy	
Knowledge of Cognition 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.33 Evidence of external utterances reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task.		
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	
		<i>Clear opinion offered with justification</i>		

Figure 4.31.Competent critical literacy response to Own Experiences/Culture [Audrey 12 years old, Year 6].

Allan’s response in Figure 4.32 took the view of unfair treatment by the author indicating a character was treated unfairly because they only “lasted” one page. It scores as a quality response because of the justification. Being a fairly brief response, the identification of observed metacognitive regulatory behaviours is limited.

Metacognitive Knowledge		SHORT STORY Q11: Is anyone treated unfairly in the story?	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support	✓	Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 12			Self-corrects	Control
Knowledge of Cognition			Repeats a strategy to check accuracy	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			Use of modal language	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	
		Clear opinion offered with justification		

Figure 4.32.Competent critical literacy response to Own Experiences/Culture [Alan 9 years old, Year 3].

4.7.3.2 Poor quality critical literacy responses and metacognitive behaviours

Poor responses to this text were only those that did not address the question. Justification was not requested in the question design and therefore was not an indicator for a poor response. However, a number of younger participants simply answered yes or no to this question and these scored as poor quality responses.

4.8 Conclusion

This chapter has overviewed the discourse analysis process of selected questions and participants' answers across the three texts used in this study. It has detailed how responses were judged to reflect critical literacy competency, and briefly commented on some of the observed metacognitive behaviours associated with these responses. It has also demonstrated how the elements of critical literacy and metacognition were assessed separately.

The following three chapters will focus on the individual data of eleven case studies, focusing on age, stage of education and reading ability. The data analysed in these chapters will form the basis of the final Discussion and Conclusion chapters of this study.

CHAPTER FIVE: STAGE 1 CASE STUDIES

5.1 Introduction

This chapter will look in detail at the results of four Stage 1 participants who took part in this study: Michael, Sarah, Lee and Bradley.

5.1.1 Selection Process and Justification of Choice

With only two participants from Year 1 to select from, and both identified as talented readers, Michael was chosen as a case study in this chapter as he had completed all three sessions. A larger Year 2 contingent provided more options for selection; however, as Sarah had also completed all three texts, she was selected from group 1 for case study analysis. Lee, identified as a talented reader by his teacher, revealed some disparity in the PAT-R results and as such represents group 2 in this chapter. Bradley was selected as a case study because he was the only typical reader across Stage 2. However, as he only completed two of the three texts in this study due to absence, Bradley's data is not as rich as the other three. Hence, a cross section of participants is represented from each of the three ability groups including one talented reader each from Year 1 and Year 2, a group 2 reader, and a typical reader from group 3.

Michael: Year 1 – Talented Reader

5.2 Introduction

This section will focus on Michael's performance across the three filmed-sessions, specifically identifying his ability to complete critical literacy questions and the metacognitive behaviours he utilised during this process. At the time of testing Michael was 7.5 years of age and completing the final month of Year 1.

5.2.1 Reading Profile

Michael has been streamed into the top reading groups since starting school two years previously. At the beginning of the year at age 6.6 years, Michael attained a reading age of 9.1 in the Waddington standardised reading assessment. In the PAT-R Standardised reading test

conducted in the final session of the current study in November, he achieved a 91 percentile ranking. Both results unequivocally categorise Michael as a talented reader according to Gagné's (2008) definition, performing within the top 10% achievement band of 7-year olds.

In his ERAS survey (Appendix G) Michael claimed a very positive attitude towards recreational reading; however, he leaned negatively towards some reading activities at school, specifically reading schoolbooks, the stories read in class, being asked questions about his reading and being asked to read out loud in class.

According to his parents' questionnaire, Michael, the youngest of two boys, has grown up in a home that highly values reading and the practice of daily reading: '*... on the day he was born and everyday up to about 5 years of age. Then we had him reading large chunks of text to us'* (answer to question 11 from Michael's mother). The parent questionnaire also revealed that he began reading at about 3 years of age, possibly earlier. His mother described Michael as ... *a voracious, independent reader who still will pretend he can't read with people/teachers if he thinks they think he can't read.* With regards to his experiences of reading once he started school they wrote: *Readers being sent home were loathed – they were ysetitively (sic) similar – way beneath his level / interest/ and ability.* In this present study, Michael completed all three filming sessions, and a discussion of these results is presented in the next section.

5.2.2 Overview of Critical Literacy and Metacognitive Performance

Table 5.1 collates the results of Michael's responses to the critical literacy questions selected for analysis in this study, and includes the identified Knowledge of Cognition (KoC) and Regulation of Cognition (RoC) behaviours observed, represented by Tarricone's (2011) Taxonomy numeric coding, as detailed in Appendix B.

Table 5.1

Michael: Overview of Critical Literacy and Metacognitive Performance

<i>Critical Literacy Questions</i>	<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	<i>KoC</i>	<i>KoR</i>	<i>Word Count</i>
<i>Questions Power</i>	Poem Q4: Does anyone or anything have power and control in this situation?		Opinion offered without justification	9.10 9.28	9.33	4
	Poem Q5: Who does not have control?		Opinion offered without justification	9.10 9.28	9.33	3
	P..B Q6 Who has power and control in this story? Why do you think this?	Clear opinion offered with justification [1] Questions Power		9.8 9.28 9.24	9.40 9.33	25
	P.B. Q7 Who does not have power and control in this story? Why do you think this?	Clear opinion offered with justification [1] Questions Power		9.8 9.10 9.28	9.40 9.33	4
	S.S. Q7 Who has the power and control in this story? Why do you think this?		Unable to answer	9.10 9.14	9.33	8
	S.S. Q8 Who does not have power and control in this story? Why do you think this?		Opinion offered without justification	9.10	9.33	6
	Poem Q6: Is there a message in this poem?	Identifies [2] Underlying message		9.10 9.24 9.28 9.31	9.40 9.33	36
<i>Unspoken message</i>	Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.		Unable to answer	9.10	9.33	10
	P.B. Q12 Why do you think the author wrote this story?		Unable to answer	9.6 9.10	9.33	23
	P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?	Clear opinion offered with justification		9.28 9.26	9.40 9.33	23
	P.B. Q15 Do you think this story is telling you to take some action In your own life? Explain	<i>Technical difficulties</i>				
	S.S. Q15 Why do you think the author wrote this story?		Unable to answer	9.10	9.33	5
	S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?		Opinion offered without justification	9.10	9.33	13
	P.B. Q8 Is there anybody in the story who should have a say but does not?		Opinion offered without justification	9.28	9.33	4
<i>Gaps</i>	S.S. Q10 Is there anyone's point of view missing from the story?	Identifies [3] Absences / gaps		9.28	9.33	3
	Poem Q9 Why do you think the author used this title for the poem?		Unable to answer	9.10	9.33	8
	P.B. Q2 Where do you think this story took place?	Identifies [4] Similarities with other texts (historical event) [5] Considers influences of own experiences / culture		9.10 9.8 9.14	9.40 9.33	15
	P.B. Q3 Have you read, seen or heard about a story like this before? Explain.		Intent of answer is unclear	9.10	9.33	13
	S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?		Opinion offered without justification	-	-	1
	S.S. Q3 What is different in this story?		Unable to answer	9.10	-	2
	Poem Q3 Could this really happen?	[5] Considers influences of own experiences / culture.		9.10 9.28 9.26	9.20 9.40 9.33	43
<i>Own experiences / culture</i>	Poem Q7 Do you think this is an important message? Explain		Unable to answer	9.10 9.24	9.33	24
	P.B. Q4 Do you think this could really happen? Why do you think this?	5] Considers influences of own experiences / culture.		9.24	9.33 9.43	14
	P.B. Q10 Who do you think should read this story? Why?		Unable to answer	9.10	9.33	9
	P.B. Q11 Is there anyone in the story who needs help? Explain	Clear opinion offered with justification		9.8 9.24	9.20 9.33	26
	P.B. Q14 Show the camera the most important double page in this book and explain why you think this.	<i>Technical difficulties</i>				
	S.S. Q11 Is anyone treated unfairly in the story?	[5] Considers influences of own experiences / culture.		9.8 9.24	9.33	4
	Total questions answered: 25	1	9	15	Total Av.	13

5.2.2.1 Examples of multiple elements explored and metacognitive behaviours

Figure 5.1 presents Michael's strongest response to any critical literacy question in the analysed series, because it reflects two critical literacy elements, *similarities with other texts* and *considers influences of own experiences/culture*. From the picture book *The Rabbits*, Michael has processed the imagery and language of the text and drawn on his declarative knowledge to make inferences that correctly situate the context within Australia. The stylised nature of the images gives few indications of an Australian context. However, there are two statements in the text that give a strong allusion to historical issues with Indigenous peoples such as 'The rabbits came many grandparents ago', '... and stole our children', and only two contextual nouns 'gum trees' and 'billabongs'.

Metacognitive Knowledge		PICTURE BOOK Q2: <i>Where do you think this story took place?</i> <i>Response:</i> Um – I'm going to have a look at the pictures – ok – I'd say Australia – Ok.	Metacognitive Regulation		
KoP	Refers to own capabilities, strengths and weaknesses (Pink)	✓	✓ External utterance suggest inner thinking before answering fully	Planning Monitor Control	
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing		
KoS	Elaborates / draws on text evidence to support	✓	✓ Self- commentates		
	Uses metalanguage in answer		Detection of error/s during answer		
WORD COUNT: 15			Self-corrects		
Knowledge of Cognition			Repeats a strategy to check accuracy		
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.8 Connotative knowledge evident through associations being made between elements i.e. utilising the text to support answer [Declarative]. 9.14 Task knowledge and sensitivity supported by reflection demonstrated through considered pauses and thoughtfulness at the start of response. It acknowledges an awareness of task complexity, learner limitations and cognitive processes, and attempts to facilitate planning to meet task demands [Declarative / Task].			Use of modal language		
Regulation of Cognition					
9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident). 9.8 Connotative knowledge evident through associations being made between elements i.e. utilising the text to support answer [Declarative]. 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Process monitoring is evident through self-commentary, confirming answer to self.					
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>		
[4] Similarities with other texts [5] Considers influences of own experiences / culture					

Figure 5.1. DAF: Michael - Picture Book Question 2.

In answering this question, Michael is also observed initiating the strategy of looking back at the book to assist his response, addressing the goals of the tasks associated with self-regulated learner strategies. According to Tarricone, this can be regarded as higher order cognitive knowledge represented as HOA.38 in the taxonomy (2011, p. 163). In addition to these

metacognitive behaviours, Michael's cognitive processing is visible through the external utterances of thinking, pausing and self-commentary, reflective of critical thinking and reflective judgement.

5.2.2.2 Examples of single elements explored and metacognitive behaviours

Nine of Michael's twenty-five responses reflect some exploration of an element of critical literacy. Figure 5.2 reveals his ability to detect the poem's underlying message of the consequences of pollution. To accomplish this, he has had to look beyond the poem's literary devices of metaphor and personification, and draw on his personal experiences and cultural understandings.

Metacognitive Knowledge			POEM Q6 <i>Is there a message in this poem?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses. (Pink)	✓	Response: I think there might be a kind of – I think the message in the story, or whatever it is, poem – it tells not to pollute things or something like that.	✓ External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing ✓ Self- commentates ✓ Detection of error/s during answer ✓ Self-corrects ✓ Repeats a strategy to check accuracy ✓ Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it	✓		
KoS	Elaborates / draws on text evidence to support	✓		✓ ✓ ✓ ✓ ✓ ✓
	Uses metalanguage in answer	✓		
WORD COUNT: 5				
Knowledge of Cognition			Regulation of Cognition	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.31 Context and contextual conditions influence strategy use, transfer and regulation [Conditional / Strategy].			9.40 Self-initiates strategies and monitors and controls these to address task demands 9.33 Goal specification and planning demonstrated through process monitoring, monitoring clarity and accuracy through cognitive pausing, expression of thought, detection of errors, self-correction &/or repetition and the use of modal language to modulate expression and ideas expressed.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored		Poor Critical Literacy quality answer
		Identifies 2] Underlying message		

Figure 5.2. DAF: Michael - Poem Question 6.

The response shown in Figure 5.3 reveals Michael's inadequate domain knowledge about the historical allusions made in *The Rabbits* and the metaphor that runs through this text. Instead he has made a literal interpretation of the story. The language used in this response is also revealing of Michael's verbal ability. His use of strong modal language of "definitely" reflects a strident opinion not revealed in any of his other responses in this study. The advanced vocabulary expressed through the adjective "basically" and repeated noun "intelligent" also reflects a mature level of language usage than may be expected for a 7 year-old child.

Metacognitive Knowledge		PICTURE BOOK Q4: <i>Do you think this could really happen? Why do you think this?</i> <i>Response:</i> Definitely no — they're not intelligent enough and - basically, they're not intelligent enough at all	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses.(Pink)		External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing
KoT	Completes requirements of task i.e. reads question and answers it ✓		Self- commentates Detection of error/s during answer
KoS	Elaborates / draws on text evidence to support		Self-corrects ✓ Repeats a strategy to check accuracy
KoS	Uses metalanguage in answer		✓ Use of modal language
WORD COUNT: 3			
Knowledge of Cognition		Regulation of Cognition	
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. Negative: 9.30 Response reflects inadequate domain knowledge with regards to the use of metaphors within the text and lack of awareness of task demands requiring to understand this literary technique (literally meaning only considered) [Conditional / Task].		9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task. 9.43 Internal verbalisation expressed externally includes personal beliefs	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	
		[5] Considers influences of own experiences / culture.	
		<i>Poor Critical Literacy quality answer</i>	

Figure 5.3. DAF: Michael – Picture Book Question 4.

Again, both responses reveal reflective judgement through cognitive pausing, self-commentary, self-correction and modal language. By employing the language of the question in his response, without external prompting, Michael demonstrates an understanding of the requirements of answering a literacy-based question, reflecting further domain-specific knowledge.

5.2.2.3 Examples of poor responses and metacognitive behaviours

Of the twenty-five answers across the three sessions selected for analysis Michael scored a total of fifteen *poor quality critical literacy responses*. Of these, six responses failed to provide the required justification needed for full completion of the task. So while an answer was presented, it did not meet the task goals and therefore was deemed to be a poor response. In one answer the intent was unclear. In eight responses Michael stated that he was not able to answer the question, as shown in Table 5.2.

Table 5.2

Michael: Collated Poor Responses

1	S.S. Q7 Who has the power and control in this story? Why do you think this?	Um - hmm-I'm not sure about that either
2	Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.	Um –I'm not sure- Not so sure about that question.
	P.B. Q12 Why do you think the author wrote this story?	I don't know—maybe... inaudible mumbling as he returns to the book— what was the question again? – why do you think the author wrote this story? I do not know that.
	S.S. Q15 Why do you think the author wrote this story?	I'm not sure about that.
4	Poem Q9 Why do you think the author used this title for the poem?	I'm not sure – I'm not sure at all
	S.S. Q3 What is different in this story?	Don't know
5	Poem Q7 Do you think this is an important message? Explain	I do not know the answer to that question – ok –um – Um – I'm not sure about if this is an important message or not.
	P.B. Q10 Who do you think should read this story? Why?	I don't really know how to answer that question

Some commonalities can be seen across these answers. Michael appears to have difficulty responding to questions requiring assumptions to be made about authorial intent, with three of the four questions in this category unable to be answered. The fourth question asked if the author had a message in telling the story. Michael did not believe any such message was in the story, simply providing an opinion without justification as requested.

Table 5.3 overviews Michael's responses according to McDaniel's five critical literacy categories. He appears to have had more difficulty in determining underlying message and identifying similarities between texts across the three sessions.

Table 5.3

Michael: Critical Literacy Response Scores

McDaniel's Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power	6	0	2	0	3	1
[2] Underlying message	6	0	1	1	1	3
[3] Absences / gaps	2	0	1	0	1	0
[4] Similarities other texts	5	1	0	0	1	3
[5] Own experiences	6	0	3	1	0	2
Total	25	1	7	2	6	9

Even Michael's poor quality responses reflect some level of metacognitive self-knowledge through the verbalisations of his inability to answer these questions in an articulate manner. He does not ignore difficult questions, or give limited, fragmented answers, as other Stage 1 participants did. Instead, most of Michael's answers in this category use the personal pronoun for self-reflection, cognitive pausing and external utterances, suggesting cognitive processing and effort being made to meet the goals of the task. There is also an advanced semantic and syntactic ability reflected in many of his replies. For example, in all but one response Michael uses a level of modality in his language of being 'not sure' rather than 'not knowing', which suggests a degree of self-understanding of his abilities. He also often gives grammatically correct responses that incorporate multiple clauses, rather than single clause answers. Again, this suggests domain-knowledge awareness of literacy tasks and a high level of verbal and language ability for his age.

Michael also demonstrates the employment of a variety of task-strategies in his attempt to problem-solve. Examples include repeating the question, employing metalanguage in rewording the question, and returning to the text in an attempt to find solutions. Picture Book question 10 may be an example of Michael's reading automaticity, in which he re-reads the question multiple times continually misreading 'why' for 'who' at a quick pace, rather than slowing down the process to check his decoding. In this instance it suggests Michael believes his reading skills are at a level that do not require focus on decoding, but rather rely more on meaning making strategies.

5.2.3 Metacognition Profile

Over the three sessions Michael was able to give a number of solid responses within each of McDaniel's five critical literacy categories. To do this he employed several identifiable metacognitive behaviours to help problem-solve these novel and challenging questions. In many answers a level of declarative, procedural and conditional knowledge was reflected through the utilisation and adaptation of domain-specific strategies to successfully answer questions. Across most of his replies Michael demonstrated varying degrees of regulation of his cognitive

processing through planning, monitoring and control strategies. These included external utterances reflecting thoughtfulness and cognitive pausing, repetition, self-correction, self-commentary and the use of modal language to clarify intent. An overview of Michael's observed metacognitive behaviours is shown in Table 5.4.

Table 5.4

Michael: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition:	Evidence Across Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	-
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	✓
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	-
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	-
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	✓
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	-
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	✓

Adaptation of Tarricone (2001) Taxonomy of Metacognition

Michael's written responses to the MARSI survey, overviewed in Table 5.5 (see Appendix G), appear to juxtapose the behaviours and skills observed in this study. If relying solely on this self-report survey, Michael's metacognitive abilities would not portray ability in this area. For example, in the MARSI he stated that he 'never' checks his understanding when he comes across information that does not make sense. While this was observed in one reading, he was observed

on several other occasions focusing on meaning making. His overall scores in MARSI reflected a strong under-reliance on global and support reading strategies, in contrast to what he was observed doing in this study.

Table 5.5

Michael: Overview of MARSI Scores

MARSI - MICHAEL	A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS	
[G] Global Reading Strategies	7	0	5	0	2	14
[P] Problem-Solving Strategies	2	0	4	1	1	8
[S] Support Reading Strategies	7	0	1	0	0	8

From this small snapshot of Michael's performance over the three sessions of this study, there were moments of reflective judgement evident in his responses. While this was not consistent across all answers, it was evident in approximately half of his answers. In this study Michael demonstrated some declarative, procedural and conditional knowledge as evidenced in his task sensitivity, and understandings of how to meet task goals in many of his responses.

If, as Tarricone (2011) states, strategy selection and monitoring is influenced by the self-system (9.22) it is suggested that Michael's self-system has already accumulated a significant level of metacognitive skills with regards to his knowledge of his own cognition and regulation of that cognition, that some believe are not common in children of Michael's age. There may be a link between Michael's advanced language and reading abilities and the level of his metacognitive development.

Sarah: Year 2 – Talented Reader

5.3 Introduction

This section will discuss Sarah, who was identified as a talented reader by her principal, and this was supported by standardised reading tests. At the time of this study Sarah was 8.3 years old and in the final weeks of Year 2, and had been in Australia for twelve months after

spending the previous three years overseas with her family on a Royal Australian Air Force posting.

5.3.1 Reading Profile

In February, at 7.6 years of age Sarah, scored a reading age of 9 years and 11 months, and as such meets the Reis (2004) requirements of a talented reader performing two years beyond her chronological age. For this study Sarah scored a 99% ranking in the PAT-R, also satisfying Gagné's (2008) talent criteria of performance in the top 10% of eight-year old readers. In her ERAS survey (see Appendix G) Sarah recorded that while she holds positive attitudes towards recreational reading, she is not as keen with reading at school. Her least favoured areas for reading at school include being asked questions about what she has read by her teacher, reading school books in general, the stories read during reading time, and being asked to read out loud in class.

Sarah did not return her parent survey. However, her older sister Isla who also participated in this study did so. Based on Isla's Parent Questionnaire results, reading in the home is an important activity for this family: '*I'd say we just always made books a part of all our lives and since we love books and reading we tried to pass that passion on to our kids*'. It is also significant that this survey revealed that both parents read to the girls every night in their younger years, and that both girls are currently independent readers. However, their mother makes a point of reading everything they read and talking about these books with them. Sarah completed all three filmed sessions, and a discussion of these results is presented in the next section.

5.3.2 Overview of Critical Literacy and Metacognitive Performance

Table 5.6 collates the results of Sarah's responses to the critical literacy questions selected for analysis in this study, and aligns these with the Knowledge of Cognition (KoC) and Regulation of Cognition (RoC) strategies observed during these responses.

Table 5.6

Sarah: Overview of Critical Literacy and Metacognitive Performance

<i>Critical Literacy Questions</i>	<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	<i>KoC</i>	<i>KoR</i>	<i>Word Count</i>
<i>Questions Power</i>	<i>PoemQ4: Does anyone or anything have power and control in this situation?</i>		Clear opinion offered with justification	9.10 9.28 9.6	9.33	16
	<i>Poem Q5: Who does not have control?</i>		Clear opinion offered with justification	9.10 9.28 9.24	9.33	18
	<i>P..B Q6 Who has power and control in this story? Why do you think this?</i>		Clear opinion offered with justification [1] Questions Power	9.10 9.28 9.24 9.6	9.33 9.40	24
	<i>P.B. Q7 Who does not have power and control in this story? Why do you think this?</i>		Clear opinion offered with justification [1] Questions Power	9.10 9.28 9.6 9.24	9.33 9.40	48
	<i>S.S. Q7 Who has the power and control in this story? Why do you think this?</i>		Clear opinion offered with justification [1] Questions Power	9.10 9.28 9.15 9.24 9.26	9.33 9.40 9.20	91
	<i>S.S. Q 8 Who does not have power and control in this story? Why do you think this?</i>		Clear opinion offered with justification [1] Questions Power	9.10 9.28 9.15 9.26	9.33	63
<i>Unspoken message</i>	<i>Poem Q6: Is there a message in this poem?</i>		Clear opinion offered with justification	9.10 9.28 9.24	9.33	27
	<i>Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.</i>		Clear opinion offered with justification	9.10 9.28 9.24 9.6	9.33 9.43	28
	<i>P.B. Q12 Why do you think the author wrote this story?</i>		Clear opinion offered with justification	9.10 9.28 9.15 9.24	9.33 9.42	97
	<i>P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?</i>		Clear opinion offered with justification	9.10 9.28 9.24	9.33 9.43	23
	<i>P.B. Q15 Do you think this story is telling you to take some action In your own life? Explain</i>	Identifies 2] Underlying message & [5] Own experiences		9.10 9.28 9.15 9.6 9.7 9.24	9.33 9.40 9.43	119
	<i>S.S. Q15 Why do you think the author wrote this story?</i>	Identifies 2] Underlying message & [5] Own experiences		9.10 9.28 9.15 9.6 9.7 9.18	9.33 9.40 9.42 9.43	62
	<i>S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?</i>		Clear opinion offered with justification	9.10 9.28 9.6	9.33 9.42	25
<i>Gaps</i>	<i>P.B. Q 8 Is there anybody in the story who should have a say but does not?</i>		Identifies [3] Absences / gaps	9.10 9.28 9.18 9.24	9.33 9.43	67
	<i>S.S. Q10 Is there anyone's point of view missing from the story?</i>		Identifies [3] Absences / gaps	9.10 9.28 9.26 9.24	9.33 9.42	83
<i>Similarities other texts</i>	<i>Poem Q9 Why do you think the author used this title for the poem?</i>		Intent of answer is unclear	9.28 9.6	9.33	9
	<i>P.B. Q13 What do you think is the author's opinion about this situation this story tells us about?</i>		Identifies 2] Underlying message	9.10 9.28 9.24	9.33 9.43	23
	<i>P.B. Q3 Have you read, seen or heard about a story like this before? Explain.</i>		Identifies 2] Underlying message	9.10 9.28 9.14	9.33	62
	<i>S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?</i>		Identifies [4] Similarities with other texts	9.10 9.28	9.33 9.40	32
	<i>S.S. Q3 What is different in this story?</i>		Identifies [4] Similarities with other texts	9.10 9.28	9.33 9.40	59
<i>Own expere</i>	<i>Poem Q3 Could this really happen?</i>		[5] Considers influences of own experiences / culture.	9.10 9.28 9.24	9.33	26

	<i>Poem Q7 Do you think this is an important message? Explain</i>			Opinion offered without justification	9.10 9.28 9.24	9.33	22
	<i>P.B. Q4 Do you think this could really happen? Why do you think this?</i>		[5] Considers influences of own experiences / culture.		9.10 9.28 9.14	9.33	83
	<i>P.B. Q10 Who do you think should read this story? Why?</i>	Clear opinion offered with justification [1] Questions Power & [5] Considers influences of own experiences / culture.			9.10 9.28 9.14 9.15	9.33 9.40 9.43	143
	<i>P.B. Q11 Is there anyone in the story who needs help? Explain</i>		[5] Considers influences of own experiences / culture.		9.10 9.28 9.14	9.33 9.43	75
	<i>P.B. Q14 Show the camera the most important double page in this book and explain why you think this.</i>		[5] Considers influences of own experiences / culture.		9.10 9.28 9.14 9.15	9.33 9.40 9.43	88
	<i>S.S. Q11 Is anyone treated unfairly in the story?</i>		Clear opinion offered with justification		9.10 9.28 9.24	9.33	72
	Total questions answered: 27				Total Average		54

5.3.2.1 Examples of multiple elements explored and metacognitive behaviours

Figure 5.4 presents one of Sarah's stronger responses to a critical literacy question in the analysed series. From a critical literacy perspective Sarah has questioned power relationships within the text as well as drawing on her own cultural and personal experiences and understandings. She is clearly passionate about the poor treatment of animals witnessed in her life, even to the point of questioning the value of scientific study of animals. She communicates these personal beliefs through the employment of modal language features and occasional repetition to control and emphasise her meaning and intent. The metacognitive behaviours observed in this response reveal her understanding of the task goals and she employs a number of relevant strategies to accomplish this. While procedural knowledge is implicit in the answering of the question, declarative and conditional knowledge elements are also clearly identifiable.

Metacognitive Knowledge		PICTURE BOOK Q10 <i>Who do you think should read this story and why?</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses.(Pink)	<p><i>Response:</i></p> <p>I think people should read this story because it's all about how all the animals feel – when you take the babies away – you take them away from their habitat, you put them in zoos, which don't have their habitats – just for entertainment, and –entertainment and learning because we can learn in the wild. We don't have to learn about tigers and lions we've already got that done, because scientists are very important. Now sketching how they eat - and live - and like do that stuff isn't very important. Put in their natural habitat. I mean, you could catch lizards for one day, give them their real food, look up what they eat – and go. Afterwards. And that's fine, for one day. They'll be scared to death and they loose their tails but they'll grow back – but – it's not very nice for them.</p>	✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it		✓ Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 143			Self-corrects	
			✓ Repeats a strategy to check accuracy	Control
			✓ Use of modal language	
Knowledge of Cognition		Regulation of Cognition		
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person].		9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task.		
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Use of modal language and repetition to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.		
9.14 Task knowledge and sensitivity supported by reflection demonstrated through considered pauses and thoughtfulness at the start of response. It acknowledges an awareness of task complexity, learner limitations and cognitive processes, and attempts to facilitate planning to meet task demands [Declarative / Task]		9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident).		
9.15 Complexity and appropriateness of response and / or drawing on the text to support conclusions demonstrate an understanding, reflection and awareness of the value and transferability of a variety of strategies in various contexts and tasks [Declarative / Strategy].		9.43 Internal verbalisation expressed externally includes personal beliefs		
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	
Clear opinion offered with justification [1] Questions Power & [5] Considers influences of own experiences / culture.				

Figure 5.4.DAF: Sarah – Picture Book Question 10

5.3.2.2 Examples of single elements explored and metacognitive behaviours

Twenty-two of Sarah's twenty-seven responses exhibit an ability to address the issue

presented within the critical literacy question, sometimes specifically, other times not so defined.

Seven of the twenty-two in this category were classified as 'opinion with justification' such as the example below in Figure 5.5.

Metacognitive Knowledge		POEM Q5 <i>Who does not have control?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses. (Pink)	✓	✓ External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing Self- commentates Monitor
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer	✓	Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Control
WORD COUNT: 18			✓ Use of modal language
Knowledge of Cognition		Regulation of Cognition	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer
		Clear opinion offered with justification	

Figure 5.5. DAF: Sarah – Poem Question 5

One example (shown in Figure 5.5) shows that Sarah is aware that she must answer the question, but her doubt about her own ability to do so is demonstrated through her language choices and modal language. Her awareness of the right way to answer a literacy question is revealed in her use of the question in the answer. Analysing the responses given in the poem session revealed Sarah has not made the connection between the use of metaphor and personification as a literary devise to communicate a specific message or real-world event (see her poem responses to questions 3, 6, 7 9, and 10 in Appendix G). However, she does demonstrate an ability to connect the text with her own experiences and culture as shown in the following example.

Metacognitive Knowledge		PICTURE BOOK Q11: <i>Is there anyone in the story who needs help? Explain</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses. [Pink]		External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing
KoT	Completes requirements of task i.e. reads question and answers it		Planning Self- commentates ✓ Detection of error/s during answer
Ko	Elaborates / draws on text evidence to support		Monitor ✓ Self-corrects Repeats a strategy to check accuracy
	Uses metalanguage in answer		Control ✓ Use of modal language
WORD COUNT: 75		Response: We need help because we're the animals, so, we need help - and – because we're doing all this stuff that they need – they're not taking care of us – not doing anything – we'll die. I know dying is not the worse thing – but it - should be the opposite way around. We need to care and not cut down the trees -buildings, er, no -we can still have buildings– they're made of brick, wood.	
Knowledge of Cognition		Regulation of Cognition	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.14 Task knowledge and sensitivity supported by reflection demonstrated through considered pauses and thoughtfulness at the start of response. It acknowledges an awareness of task complexity, learner limitations and cognitive processes, and attempts to facilitate planning to meet task demands [Declarative / Task].		9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Process monitoring or monitoring planning goals to complete the task is evident through detection of errors during the response. 9.33 Use of self-correction strategies to moderate meaning demonstrates an understanding of a level of accuracy knowledge required for the task. 9.43 Internal verbalisation expressed externally includes personal beliefs	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>
		[5] Considers influences of own experiences / culture.	

Figure 5.6. DAF: Sarah – Picture Book Question 11

Again, Sarah's passion for animals and issues of fairness has been ignited by this text (Figure 5.6), demonstrating a strong level of compassion and ability to connect with critical literacy elements. Her employment of appropriate strategies to meet the task goals and the language features utilised identify specific metacognitive behaviours within the two core components of knowledge of cognition and regulation of cognition, as listed in each of the discourse analysis boxes in the above tables.

5.3.2.3 Examples of poor responses and metacognitive behaviours

Of Sarah's twenty-seven answers only two were identified as *poor* in meeting the critical literacy criteria, and both were responses to the poem.

Metacognitive Knowledge		Poem Q9: <i>Why do you think the author used this title for the poem?</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses.(Pink)		✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing	Monitoring
Ko	Elaborates / draws on text evidence to support		✓ Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 9			✓ Self-corrects	Control
Knowledge of Cognition			Repeats a strategy to check accuracy	
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			✓ Use of modal language	
9.6 Self-appraisal evident in self-commentary shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability				
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
			Intent of answer is unclear	
Metacognitive Knowledge		POEM Q7: <i>Do you think this is an important message?</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses.(Pink)	✓	✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing	Monitoring
Ko	Elaborates / draws on text evidence to support		✓ Self- commentates	
	Uses metalanguage in answer	✓	Detection of error/s during answer	
WORD COUNT: 22			✓ Self-corrects	Control
Knowledge of Cognition			Repeats a strategy to check accuracy	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person].			✓ Use of modal language	
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].				
9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task].				
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
			Opinion offered without justification	

Figure 5.7. DAF: Sarah – Poem Question 9 and Question 7

Both of these poor responses (shown in Figure 5.7) reflect a significantly lower word count than the average 54 words calculated across Sarah's 27 responses analysed for this study. In addition, Sarah frames the first response in this set using a second person perspective, unlike the other self-reflective first person answers. This may be an attempt to generalise and deflect the difficulty she is experiencing in answering this question, shifting the focus to 'others' rather than indicating a lack of her own understanding.

Table 5.7 overviews Sarah's responses in accordance with McDaniel's five critical literacy categories.

Table 5.7

Sarah: Overview of Critical Literacy Response Scores

McDaniel's Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power	6	0	4	2	0	0
[2] Underlying message	7	2	0	5	0	0
[3] Absences / gaps	2	0	2	0	0	0
[4] Similarities other texts	5	0	4	0	0	1
[5] Own experiences	7	1	5	0	1	0
Total	27	3	15	7	1	1

This table shows Sarah has a developing grasp on the critical literacy elements tested in this study. A number of responses reflected her understanding of the need to justify her thoughts; however, they did not directly relate to any of McDaniel's critical literacy categories. With only two poor responses out of the twenty-seven selected for discourse analysis, this reinforces Sarah's understanding of the task goals and her willingness to reflect on her own interpretations of the texts.

5.3.3 Metacognition Profile

In all of the three sessions, Sarah demonstrated a number of positive metacognitive behaviours in her endeavours to answer these challenging questions. She showed no reticence in reflecting on and communicating her self-beliefs about the topics included across the texts. She was most passionate about the issues of animal injustice that were simulated through the picture book text. Table 5.8 overviews the specific metacognitive behaviours that were observed across Sarah's twenty-seven analysed responses.

Table 5.8*Sarah: Overview of Observed Metacognitive Behaviours*

Knowledge of Cognition:	Evidence Across Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	✓
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	✓
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	✓
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	✓
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	✓
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	✓
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	✓

Adaptation of Tarricone (2001) Taxonomy of Metacognition

This table (Table 5.8) indicates that Sarah has a developing self-system that influences her strategy selection and her ability to monitor strategy application in the unique problems presented to her in this study (see Appendix G). There is sufficient evidence in these examples to suggest that Sarah has well developed Metacomprehension skills through her use of reflection, self-regulation and monitoring strategies that enable successful comprehension (see Appendix G). Unfortunately, due to class commitments Sarah was not able to attend the final interview session for the full hour required to complete all of the benchmark testing data, such as the MARSI and

the MSI, so it is not possible to compare these assessments with the results attained in the current study.

Lee: Year 2 – Possible Talented Reader

5.4 Introduction

Lee has been included in this case study series because of his placement into Group 2 for this research study. This decision was based on his inclusion in the top reading group in his class based on classroom reading performance and achievement in a school-based standardised reading test. The month prior to this study, at 7.10 years, Lee attained a reading age of 9.11 in the Waddington test. At the conclusion of this study Lee's PAT-R test score situated him at 88%, placing him in the top 12% of his age peers. The small incongruence between these scores left some doubt whether Lee should be classified as a talented reader based on Gagné's (2008) definition, and therefore he was placed in Group 2 for *possible talented readers*.

5.4.1 Reading Profile

At the time of this study Lee was 7.11 years old and in the final month of Year 2. In his ERAS survey he scored as a very positive recreational reader, although not entirely happy with receiving a book for a gift or reading instead of playing. He also enjoyed reading at school, although not to the same level as recreational reading. His least favourite reading activities at school included learning from a book, reading out loud in class, and using a dictionary.

Lee's mother wrote that he began reading words without assistance at age 4, although the family did not deliberately teach him to read other than exposing him to books and reading to him. His grandmother, a former Infants teacher, played word recognition games with him before school. His mother also wrote that they had "*always read stories since (Lee) was under 12 months old*" and "*still continue bedtime stories – also listening to him do home reading*". In the section asking if there was any other information about the child's journey becoming a reader, Lee's mother added: *(The) role of symbols and signs in pre-reading stage – he was always asking*

what signs around town meant. Also remember when he realised what he was learning at school empowered him to read comics etc for himself.

Lee is the eldest of two children with the youngest having only been born two-weeks prior to the commencement of the study. For this study, Lee completed all three filming sessions, and a discussion of these results is presented in the next section.

5.4.2 Overview of Critical Literacy and Metacognitive Performance

Table 5.9 collates Lee's responses to the critical literacy questions selected for analysis in this study.

Table 5.9

Lee: Overview of Critical Literacy and Metacognitive Performance

Critical Literacy Questions	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Poor Critical Literacy quality answer	KoC	KoR	Word Count
<i>Questions Power</i>	<i>Poem Q4: Does anyone or anything have power and control in this situation?</i>	Clear opinion offered with justification		9.28 9.7	9.33 9.40	18
	<i>Poem Q5: Who does not have control?</i>	[1] Questions Power & [5] Considers influences of own experiences / culture.		9.24 9.28	9.33 9.40	29
	<i>P..B. Q6 Who has power and control in this story? Why do you think this?</i>	[1] Questions Power		9.24 9.28	9.33 9.40	18
	<i>P.B. Q7 Who does not have power and control in this story? Why do you think this?</i>	[1] Questions Power		9.24 9.28 9.10	9.33 9.40	30
	<i>S.S. Q7 Who has the power and control in this story? Why do you think this?</i>	[1] Questions Power		9.24 9.28 9.10	9.33 9.40 9.20	26
	<i>S.S. Q8 Who does not have power and control in this story? Why do you think this?</i>		Intent of answer is unclear	9.24	9.33	12
<i>Unspoken message</i>	<i>Poem Q6: Is there a message in this poem?</i>	[2] Underlying message		9.24 9.28 9.10	9.33 9.40	20
	<i>Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.</i>	[2] Underlying message		9.24 9.28 9.10	9.33 9.40	20
	<i>P.B. Q12 Why do you think the author wrote this story?</i>	Clear opinion offered with justification		9.24 9.28 9.10	9.33	26
	<i>P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?</i>	Clear opinion offered with justification		9.28 9.10	9.33	22
	<i>P.B. Q15 Do you think this story is telling you to take some action in your own life? Explain</i>	[2] Underlying message		9.28 9.10	9.33	19
	<i>S.S. Q15 Why do you think the author wrote this story?</i>	Opinion given with evidence of other options considered		9.24 9.10 9.6	9.33	11
	<i>S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?</i>	Opinion given with evidence of other options considered		9.28 9.10 9.6	9.33	14
<i>Gaps</i>	<i>P.B. Q 8 Is there anybody in the story who should have a say but does not?</i>		Opinion offered without justification	9.24 9.10 9.6	9.33	14
	<i>S.S. Q10 Is there anyone's point of view missing from the story?</i>	[3] Absences / gaps		9.28	9.33	13
<i>Similarities other texts</i>	<i>Poem Q9 Why do you think the author used this title for the poem?</i>	[2] Underlying message		9.28 9.10 9.6	9.33	34
	<i>P.B. Q2 Where do you think this story took place?</i>	Opinion given with evidence of other options considered		9.24 9.28 9.10	9.33	12
	<i>P.B. Q3 Have you read, seen or heard about a story like this before? Explain.</i>	Clear opinion offered with justification		9.28 9.10	9.33	17
	<i>S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?</i>	[4] Similarities with other texts		9.28 9.10	9.33	20

	S.S. Q3 What is different in this story?		4] Similarities with other texts		9.28 9.10 9.19	9.20 9.40	24
Own experiences / culture	Poem Q3 Could this really happen?		[5] Considers influences of own experiences / culture.		9.28 9.19	9.20 9.40	19
	Poem Q7 Do you think this is an important message? Explain		[5] Considers influences of own experiences / culture.		9.24 9.10 9.26	9.33	31
	P.B. Q4 Do you think this could really happen? Why do you think this?		Clear opinion offered with justification		9.24 9.10 9.26	9.33 9.43	22
	P.B. Q10 Who do you think should read this story? Why?		Opinion given with evidence of other options considered		9.28 9.10	9.33	24
	P.B. Q11 Is there anyone in the story who needs help? Explain		Clear opinion offered with justification		9.28 9.24	9.33	14
	P.B. Q14 Show the camera the most important double page in this book and explain why you think this.		Clear opinion offered with justification		9.28 9.10	9.33	17
	S.S. Q11 Is anyone treated unfairly in the story?		Clear opinion offered with justification		9.28 9.19	9.33	19
Total questions answered: 27		1	24	2	Total Av.	20	

5.4.2.1 Examples of multiple elements explored and metacognitive behaviours

Figure 5.8 presents Lee's strongest response to any critical literacy question in the analysed series.

Metacognitive Knowledge		POEM Q5 <i>Who does not have control?</i>	Response: The people who do not have control – are –are us. If we –we can choose – but most people don't. The government –the government has most control of this situation.	Metacognitive Regulation	
KoP	KoT			Planning	Monitor
	Refers to own capabilities, strengths and weaknesses .(Pink)			✓ External utterance suggest inner thinking before answering fully	Planning
	Completes requirements of task i.e. reads question and answers it	✓		✓ Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support			Self- commentates	Monitor
	Uses metalanguage in answer	✓		Detection of error/s during answer	Monitor
WORD COUNT: 29				Self-corrects	Control
Knowledge of Cognition				✓ Repeats a strategy to check accuracy	Control
9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].				✓ Use of modal language	Control
Multiple Critical Literacy elements explored		Single Critical Literacy element explored		Poor Critical Literacy quality answer	
Clear opinion offered with justification [1] Questions Power &[5] Considers influences of own experiences / culture.					

Figure 5.8. DAF: Lee – Poem Question 5

What makes this response so strong is the multiple critical literacy elements explored and Lee's ability to move beyond the metaphor and personification literary techniques of the poem applying these to a real-world scenario by discussing the power of government over people. Metacognitively, the response shows Lee's sensitivity to the demands of the task and his ability to self-initiate, monitor and control the necessary strategies to ensure completion of the task. In

this response, while there is some repetition, modal language and cognitive pausing employed to moderate his meaning, there is a level of confidence highlighted by the lack external utterances.

5.4.2.2 Examples of single elements explored and metacognitive behaviours

Twenty-four of the remaining twenty-seven responses reflected Lee's ability to successfully explore critical literacy concepts. Half of these responses specifically acknowledged the critical literacy element presented in the question, as shown in Figure 5.9.

Metacognitive Knowledge		Poem Q9: <i>Why do you think the author used this title for the poem?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		✓ External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it ✓	<i>Response:</i> Well, I think the author did use this because he –I reckon the author did this because he wanted to get a message from - that people not be dumping all the plastic bags	✓ Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Monitor
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		Self-corrects Repeats a strategy to check accuracy Control
WORD COUNT: 34			Use of modal language
Knowledge of Cognition		Regulation of Cognition	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.6 Self-appraisal evident in self-commentary shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability		9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident).	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	
		Identifies Underlying message	

Figure 5.9. DAF: Lee – Poem Question 9

Metacognitive Knowledge		PICTURE BOOK Q10 <i>Who do you think should read this story and why?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink) ✓		✓ External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it ✓	<i>Response:</i> Well, I think it should be people that – people who are interested in this type of subject and kind of this type of thing.	✓ Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Monitor
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		Self-corrects Repeats a strategy to check accuracy Control
WORD COUNT: 24			Use of modal language
Knowledge of Cognition		Regulation of Cognition	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	
		Opinion given with evidence of other options considered	

Figure 5.10. DAF: Lee – Picture Book Question 10

Figure 5.10 shows Lee's understanding of the needs of the task, such as giving reasons for an answer, even if has not specifically shown a clear link addressing the specific critical literacy element of the question. In both of these responses Lee demonstrates inner thinking during the response through external utterances, pausing and repetition of words. He has reiterated the question in his response reflecting domain-specific knowledge of how a literacy question should be addressed.

5.4.2.3 Examples of poor responses and metacognitive behaviours

Lee only gave two poor responses to this series as shown in Table 5.10.

Table 5.10

Lee: Collated Poor Responses

1	SHORT STORY Q8: <i>Who does not have power or control in this story? Why do you think this??</i>	Well, there's some characters do - that don't have like, they - do	Intent of answer is unclear
3	P.B. Q8: <i>Is there anybody in the story who should have a say but does not?</i>	Well, I don't reckon there is anyone in the book that has a say.	Opinion offered without justification

Even though classified as poor, these answers show a clear attempt to meet the task goals.

In the first example there is an uncharacteristic lack of cohesion in this response compared to Lee's other responses. The second answer has in fact met the criteria of the question; however, it has not reflected an understanding of the question's intent, that being identifying gaps and silences of certain characters in the story.

Table 5.11 collates Lee's responses with regards to McDaniel's critical literacy elements. There is strong evidence that Lee is able to successfully interact with each of the five critical literacy areas by adapting familiar literacy strategies. There is no pattern of difficulty evident in this chart.

Another noted feature of Lee's responses noted was the total word count. Compared with Sarah's 54-word average, Lee averaged 20 words across the study while accomplishing a similar level of success as Sarah.

Table 5.11

Lee: Overview of Critical Literacy Response Scores

McDaniel's Critical Literacy Elements	Total answers given	<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Opinion given with justification</i>	<i>Opinion without justification – poor answer</i>	<i>Unable to answer or intent unclear</i>
[1] Questions Power	6	1	3	1	0	1
[2] Underlying message	7	0	3	4	0	0
[3] Absences / gaps	2	0	1	0	1	0
[4] Similarities other texts	5	0	3	2	0	0
[5] Own experiences	7	0	2	5	0	0
Total	27	1	12	12	1	1

5.4.3 Metacognition Profile

Over the three sessions Lee provided a consistent level of reflection and understanding of his thoughts about world issues. Like Sarah, there was a level of social concern demonstrated in Lee's case with regards to pollution. His answers within the poem session revealed this awareness and concern through drawing links between the metaphor of an air raid and the personification of plastic bags. His concern was also communicated through the use of verbs, such as 'dumping', 'polluting', and real-life concepts, such as *plastic bags really do exist as checkouts and every place; ... the government has most control of this situation; ... most people don't do what they say; ... trying to stop people polluting (with) all these paper bags.*

Table 5.12 provides an overview of Lee's observed metacognitive behaviours in the selected responses for this study.

Table 5.12

Lee: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition:	Evidence in Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	✓
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	✓
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	✓
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	✓
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	✓
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	✓
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	✓

Table 5.13

Lee: Overview of MARSI Scores

MARSI - LEE	A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS	
[G] Global Reading Strategies	2	4	4	4	0	14
[P] Problem-Solving Strategies	0	2	1	3	2	8
[S] Support Reading Strategies	2	0	4	2	0	8

Table 5.13 highlights Lee's results from the MARSI self-survey. Significant in these results are Lee's considered and balanced responses in evaluating his own reading habits. For example, the four behaviours that he 'never' attends to can be directly linked to the level of requirements of a Year 2 student, specifically not being required to summarise readings, highlighting text, selective reading for a purpose and note taking. In contrast the two 'always' categories included getting back on track when concentration is lost and guessing the meaning of unknown words. Both are required reading strategies for this level of schooling. What is evident from this exercise is Lee's ability to understand and competently apply the survey to his own behaviours, supporting the assumption that he has the necessary linguistic skills to complete this challenging task.

The level of metacomprehension skills exhibited by Lee across this study suggest that he is well-placed in the top reading group within his class and at this stage, classification as a talented reader is supported by the abilities demonstrated in this analysis.

Bradley: Year 2 – Typical Reader

5.5 Introduction

The decision to include Bradley in this Stage 1 case study series was due to him being the only *typical* reader across the two campuses in Years 1 and 2 who accepted an invitation to join this study. Bradley's data are limited as he was absent for the poem session. At the time of the study Bradley was 8.2 years of age and in the final month of Year 2.

5.5.1 Reading Profile

The month prior to this study Bradley scored a reading age of 9.2 that equated to 13 months ahead of his chronological age in the Waddington standardised reading test, not high enough for him to be classified as a talented reader according to Reis's (2004) definition that talented readers should be reading 2 years in advance of their chronological age. In the PAT-R results, he scored in the 68th percentile reading ability for his age. According to his teacher Bradley works at the top end of the average reading group. His ERAS results (see Appendix G) reveal that Bradley enjoys reading but not more than playing. He has a mixed attitude towards reading at school, but strongly dislikes worksheets, reading out loud in class, using a dictionary and taking reading tests. He also does not like reading during free time at school.

In the parent survey, Bradley's mother noted that he exhibited minimal reading ability before going to school, only being able to read his name and some environmental print such as stop signs. He began to read unassisted at 5 years of age. She believes he is a fluent and competent reader with average comprehension ability, requiring more time to re-read and understand texts. Before school, his parents read stories, factual texts and listened to taped stories with him. She wrote that once he learnt sounds he "intuitively" put them together and began reading. His mother also noted that they read to Bradley before school, but did not indicate how often. An additional note included by his mother gives some insight into Bradley's reading journey:

It surprised us how quickly he learnt to read and decode difficult words, when he had very little assistance from us. His first teacher suggested he may have difficulty learning to read as she considered him ADHD and autistic.

In Bradley's final interview he communicated a strong dislike for reading and did not remember being read to before school or in present times. Following is a selection of questions and responses given by Bradley at this interview:

How would you describe yourself as a reader today?

Read little bits.

How often do you read?

Not very much.

At home do you read much?

No.

What don't you like about reading at school?

Having to read

What is about reading you don't like?

Reading words because I'd rather do something else except reading

Why is that? Do you find the words hard to read sometimes?

Sometimes.

Have you ever found a book that you really loved?

No.

Bradley has a twin sister and a younger brother, and his father is a teacher at the school he attends.

5.5.2 Overview of Critical Literacy and Metacognitive Performance

With Bradley being absent for the first filmed session, his data only includes two of the three study texts. Table 5.14 collate the assessment of Bradley's responses against McDaniel's (2006) critical literacy elements and Tarricone's (2011) taxonomy of metacognition criteria.

Table 5.14

Bradley: Overview of Critical Literacy and Metacognitive Performance

<i>Critical Literacy Questions</i>		<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	<i>KoC</i>	<i>KoR</i>	<i>Word Count</i>
<i>Questions Power</i>	<i>Poem Q4: Does anyone or anything have power and control in this situation?</i>	<i>ABSENT</i>					
	<i>Poem Q5: Who does not have control?</i>						
	<i>P..B Q6 Who has power and control in this story? Why do you think this?</i>			<i>Intent of answer is unclear</i>		<i>9.33</i>	<i>16</i>
	<i>P.B. Q7 Who does not have power and control in this story? Why do you think this?</i>			<i>Intent of answer is unclear</i>	<i>9.6 9.10</i>	<i>9.33</i>	<i>11</i>
	<i>S.S. Q7 Who has the power and control in this story? Why do you think this?</i>			<i>Not completed</i>	<i>9.10</i>	<i>9.33</i>	<i>14</i>
<i>Unspoken message</i>	<i>S.S. Q8 Who does not have power and control in this story? Why do you think this?</i>			<i>Intent of answer is unclear</i>			
	<i>Poem Q6: Is there a message in this poem?</i>						
	<i>Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.</i>						
	<i>P.B. Q12 Why do you think the author wrote this story?</i>			<i>Not completed</i>			<i>0</i>
	<i>P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?</i>			<i>Not completed</i>			<i>0</i>
	<i>P.B. Q15 Do you think this story is telling you to take some action In your own life? Explain</i>			<i>Intent of answer is unclear</i>	<i>9.28</i>	<i>9.33</i>	<i>17</i>
	<i>S.S. Q15 Why do you think the author wrote this story?</i>			<i>Clear opinion offered with justification</i>	<i>9.28</i>	<i>9.33</i>	<i>12</i>

	S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?			Not completed			I
<i>Gaps</i>	P.B. Q8 Is there anybody in the story who should have a say but does not?			Intent of answer is unclear	9.28		I
	S.S. Q10 Is there anyone's point of view missing from the story?			Intent of answer is unclear	9.28		I
<i>Similarities other texts</i>	Poem Q9 Why do you think the author used this title for the poem?	ABSENT					
	P.B. Q2 Where do you think this story took place?		Opinion given with evidence of other options considered		9.28		6
	P.B. Q3 Have you read, seen or heard about a story like this before? Explain.		Opinion given with evidence of other options considered		9.28	9.33	18
	S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?		Clear opinion offered with justification		9.28	9.33	5
	S.S. Q3 What is different in this story?		Clear opinion offered with justification		9.28	9.33	5
<i>Own experiences / culture</i>	Poem Q3 Could this really happen?	ABSENT					
	Poem Q7 Do you think this is an important message? Explain						
	P.B. Q4 Do you think this could really happen? Why do you think this?		Clear opinion offered with justification		9.28 9.10	9.33	13
	P.B. Q10 Who do you think should read this story? Why?			Not completed			0
	P.B. Q11 Is there anyone in the story who needs help? Explain			Not completed			0
	P.B. Q14 Show the camera the most important double page in this book and explain why you think this.			Not completed			0
	S.S. Q11 Is anyone treated unfairly in the story?			Intent of answer is unclear			I
Total questions answered: 20		0	6	14	Total Av	9 *	

* Average is based on only the 15 responses provided by Bradley.

5.5.2.1 Examples of multiple elements explored and metacognitive behaviours

Bradley did not provide any responses that met the criteria for this category.

5.3.2.2 Examples of single elements explored and metacognitive behaviours

None of Bradley's responses addressed the specific critical literacy elements that designed the questions in this series. He did, however, give five responses that were classified according to the criteria of this study, specifically addressing the goals of the task. Examples of these responses and the analysis of each are shown in the tables below.

Metacognitive Knowledge			SHORT STORY Q15 <i>Why do you think the author wrote this story?</i>	Metacognitive Regulation		
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)				External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	Response: To make it – to do the opposite to Little Red Riding Hood.	✓	Cognitive processing evident via pausing	Monitoring
Ko	Elaborates / draws on text evidence to support				Self- commentates	Control
	Uses metalanguage in answer				Detection of error/s during answer	
WORD COUNT:					Self-corrects	
Knowledge of Cognition 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].					Repeats a strategy to check accuracy	
<i>Multiple Critical Literacy elements explored</i>			Regulation of Cognition 9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task.	<i>Poor Critical Literacy quality answer</i>		
				<i>Clear opinion offered with justification</i>		

Figure 5.11. DAF: Bradley – Short Story Question 15

In this example (Figure 5.11) Bradley completed the goals of the task by giving a response that fully answered the question. There were no requirements to justify the answer; however, this response clearly shows the links between the text of this study and the traditional text. While it is not a strong answer from a critical literacy perspective, it does in part address the needs of the task in identifying links with other texts. In this response there is evidence of Bradley's developing conditional knowledge through his awareness of the demands of the task. The single pause gives a small indication of cognitive processing reflecting some consideration and monitoring of clarity as he modifies his expression to answer the question.

Metacognitive Knowledge			PICTURE BOOK Q3 <i>Have you read, seen or heard about a story like this before? Explain.</i>	Metacognitive Regulation		
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓			External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	Response: I haven't heard – I haven't ... inaudible ... book, well have seen the book, but I haven't read it ... or ... it.	✓	Cognitive processing evident via pausing	Monitoring
Ko	Elaborates / draws on text evidence to support				Self- commentates	Control
	Uses metalanguage in answer				Detection of error/s during answer	
WORD COUNT: 18					Self-corrects	
Knowledge of Cognition 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].					Repeats a strategy to check accuracy	
					Use of modal language	
<i>Multiple Critical Literacy elements explored</i>			Regulation of Cognition 9.33 Use of self-correction and repetition strategies to moderate meaning demonstrates an understanding of a level of accuracy knowledge required for the task.	<i>Poor Critical Literacy quality answer</i>		
				<i>Opinion given with evidence of other options considered</i>		

Figure 5.12. DAF: Bradley – Picture Book Question 3

The example in Figure 5.12 also shows Bradley attempting to meet the task goals. This is one of the few examples where Bradley uses the personal pronoun identifying the text with his own experiences and capabilities. Part of the response was inaudible, as were a number of other

responses, which tends to indicate a lack of confidence in his ability to address the task goals. As with the previous example there is clear moderating of the expression attempting to address clarity of meaning.

5.5.2.3 Examples of poor responses and metacognitive behaviours

The majority of Bradley's responses were classified as poor, with regards to addressing the elements of critical literacy as shown in Table 5.15.

Table 5.15
Bradley Collated Poor Responses

<i>Questions</i>	<i>Bradley's Answers</i>	<i>C.L Assessment</i>
P.B. Q6 Who has power and control in this story? Why do you think this?	God – because ... <i>inaudible whisper</i> ... if you didn't hear that as well – cut! Why? – because he's lord of lords	Intent of answer is unclear
P.B. Q7 Who does not have power and control in this story? Why do you think this?	Me, I don't – cause the <i>story</i> isn't true. Soooo – that's all	Intent of answer is unclear
S.S. Q7 Who has the power and control in this story? Why do you think this?	I think it because he tried to eat (<i>whispering</i> ...) the little girl. That camera looks ... <i>inaudible</i> .	Not completed
S.S. Q8 Who does not have power and control in this story? Why do you think this?	The grandma - Why do I think this? Because – they couldn't kill the wolf they had to tie him up. <i>Inaudible</i>	Intent of answer is unclear
P.B. Q12 Why do you think the author wrote this story?	<i>No attempt made to answer</i>	Not completed
P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?	<i>No attempt made to answer</i>	Not completed
P.B. Q15 Do you think this story is telling you to take some action In your own life? Explain	No – because it's not going to work – rabbits can attack but they're not in Australia – they're not.	Intent of answer is unclear
S.S. Q16 Do you think the author had a message for the readers in telling this story? IF so, what do you think it is?	No	Not completed
P.B. Q8 Is there anybody in the story who should have a say but does not?	No.	Intent of answer is unclear
S.S. Q10 Is there anyone's point of view missing from the story?	Yes	Intent of answer is unclear
P.B. Q10 Who do you think should read this story? Why?	<i>No attempt made to answer</i>	Not completed
P.B. Q11 Is there anyone in the story who needs help? Explain	<i>No attempt made to answer</i>	Not completed
P.B. Q14 Show the camera the most important double page in this book and explain why you think this.	<i>No attempt made to answer</i>	Not completed
S.S. Q11 Is anyone treated unfairly in the story?	Yes	Intent of answer is unclear

Bradley's performance in the second session with the short story text was stronger than his first attempt with the picture book. As can be seen in Table 5.15 there were a number of

questions, which after the initial reading, he chose not to answer, instead, continuing onto the next question. It is possible that his performance with the picture book may have been stronger if he had completed the task with the poem, a shorter and more accessible text. This may also have given him some experience with the language of the questions, which clearly flummoxed him in the picture book session. His first responses in the picture book session were unusual and his intent unclear. Even in the short story session some of Bradley's responses were unclear and reflected his distracted state of mind. However, in both session he did read the instructions and the texts and performed the tasks generally as instructed. It was in the execution of answering many of the questions that Bradley demonstrated a lack of understanding about what was being asked.

Table 5.16

Bradley: Overview of Critical Literacy Response Scores

McDaniel's Critical Literacy Elements	Total answers given	<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Opinion given with justification</i>	<i>Opinion without justification – poor answer</i>	<i>Unable to answer or intent unclear</i>
[1] Questions Power	4	0	0	0	0	4
[2] Underlying message	5	0	0	1	0	4
[3] Absences / gaps	2	0	0	0	0	2
[4] Similarities other texts	4	0	0	4	0	0
[5] Own experiences	5	0	0	1	0	4
Total	20	0	0	6	0	14

Table 5.16 overviews the difficulties Bradley experienced in successfully completing the critical literacy questions.

5.3.6 Metacognition Profile

In the context of this study, Bradley's performance shows a clear difference between the quality of his answers and the employment of metacognitive behaviours, in comparison with the previous three talented readers' responses. Without any other Stage 1 typical readers to compare with Bradley, it is difficult to assume if his performance is reflective of his reading ability or issues unique to Bradley himself. Table 5.17 overviews Bradley's observed metacognitive

behaviours in the selected analysed responses. Compared with the previous three participants, there are a significant number of elements from Tarricone's Metacognitive Taxonomy lacking in Bradley's responses.

Table 5.17

Bradley: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition:	Evidence in Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	-
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	-
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	-
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	-
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	-
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	-
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	-
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	-
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	-
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	-
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	-
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	-

Table 5.18 summarises Bradley's results from the MARSI self-survey. The full survey results can be viewed in Appendix G.

Table 5.18

Bradley: Overview of MARSI Scores

MARSI - BRADLEY	A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS	
[G] Global Reading Strategies	11	0	1	1	1	14
[P] Problem-Solving Strategies	4	1	0	0	2	8
[S] Support Reading Strategies	6	0	1	0	1	8

MARSI showed that Bradley felt that he ‘always’ used strategies such as summarising and reflecting on important information in a text; when he loses concentration, he tries to get back on track; he uses pictures in the text to increase his understanding; and he tries to guess the meaning of unknown words or phrases. Twenty-one of the strategies were identified as ‘never’ being adopted by Bradley in his reading practices. Compared with the results in Table 5.17 there may be some correlation between these two results indicating Bradley does not exhibit the same level of metacognitive ability as the previous Stage 1 case studies.

This chapter has presented Michael, Sarah, Lee and Bradley’s results as the four Stage 1 participants selected for the Stage 1 case studies. The chapter began with a justification of the selection process for inclusion of each participant as a case study for this study. A reading profile was established based on standardised reading results and parental interviews. A table was presented that overviewed each participant’s performance in aspects of critical literacy and metacognitive behaviours. Examples of multiple, single and poor metacognitive responses were presented and justified. An overview of the metacognitive behaviours observed were presented in table form and discussed for each participant and then compared with the results of MARSI and MSI surveys where appropriate.

CHAPTER SIX: STAGE 2 CASE STUDIES

6.1 Introduction

This chapter will highlight one example from each of the three groups from Stage 2: Sian, Allan and Leila.

6.1.1 Selection Process and Justification of Choice

Selection for these case studies prioritised maximum data potential, that being, completion of all three text sessions. Only two participants from Stage 2 Group 1 completed all three text sessions; therefore, a choice needed to be made between Sian and Ann, both from Year 3. As Ann's responses were incomplete due to her misunderstanding the instructions of some tasks, Sian, with full responses available for all questions, was selected as the Group 1 case study sample. Of the two participants in Stage 2 Group 2, Allan was the only participant who completed all three text sessions, and therefore selected over Nathan. Finally, with only one typical reader in the Stage 2 group, Leila represents the Group 3 case study for this chapter. Unfortunately, her data are incomplete due to her absence the day the picture book session ran. The close analysis of the responses of these three participants is presented in this chapter.

Sian: Year 3 – Talented Reader

6.2 Introduction

At the time of this study Sian was in the final month of Year 3 and 9.6 years of age. She completed all three filmed sessions, however, was absent from school on the day participants completed the PAT-R standardised test.

6.2.1 Reading Profile

Sian was nominated for this study and inclusion in Group 1 due to her achievement in the school-based TORCH reading test given in February in which she achieved a score of 90% therefore placing her in the top 10% of her age peers. She performed confidently throughout the year in the top reading group in class. As Sian was absent on the day of this study's

administration of the PAT-R standardised reading test, a more current reading score could not be attained; however, as the TORCH test had been taken within 12 months of this study, the results were supported.

In her ERAS survey Sian's summary of her reading behaviours reflected a fairly balanced attitude towards recreational reading. She scored *reading for fun at home, starting a new book* and *going to a bookstore* as most enjoyable pursuits. She was less keen *spending her free time reading*, and *reading instead of playing*. In contrast, her attitude towards reading at school was negative across the scale, with the exception of *reading out loud in class*. Sian's most negative scores were allocated to *completing reading worksheets* and *learning from a book*. She also indicated that she does not enjoy *reading sessions in class*.

According to Sian's parent questionnaire she and her younger sister have been read to since they were babies. The family regularly visits the local library and they attend story time sessions there. Sian lives in a home environment in which books are highly valued, and she began reading words at about four years of age. With regards to assistance in teaching Sian to read, her mother wrote:

We didn't do anything by way of formal instruction, we expected Sian would learn to read in her own good time once she started school. [Father] and I saw our primary role in her literacy as simply being to foster a love of reading and language. We tried our best to provide a happy, positive reading environment with plenty of access to a range of children's books, and plenty of access to an adult to share them with.

6.2.2 Overview of Critical Literacy and Metacognitive Performance

Table 6.1 collates Sian's responses to the critical literacy questions selected for analysis in this study and includes the identified Knowledge of Cognition (KoC) and Regulation of Cognition (RoC) behaviours observed, as represented by Tarricone's (2011) Metacognition Taxonomy Coding, detailed in Appendix G. A discussion of these results follows.

Table 6.1

Sian: Overview of Critical Literacy and Metacognitive Performance

<i>Critical Literacy Questions</i>	<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	<i>KoC</i>	<i>KoR</i>	<i>Word Count</i>
<i>Questions Power</i>	<i>Poem Q4: Does anyone or anything have power and control in this situation?</i>	[1] Questions Power		9.8 9.28 9.7 9.8	9.33 9.40	25
	<i>Poem Q5: Who does not have control?</i>	[1] Questions Power		9.28 9.24	9.33	16
	<i>P..B Q6 Who has power and control in this story? Why do you think this?</i>	[1] Questions Power		9.10 9.28 9.24 9.7	9.33 9.43	46
	<i>P.B. Q7 Who does not have power and control in this story? Why do you think this?</i>	[1] Questions Power		9.10 9.28 9.24	9.33	31
	<i>S.S. Q7 Who has the power and control in this story? Why do you think this?</i>	[1] Questions Power		9.28 9.24	9.33	27
	<i>S.S. Q8 Who does not have power and control in this story? Why do you think this?</i>		Opinion offered without justification	9.10 9.24	9.33	13
<i>Unspoken message</i>	<i>Poem Q6: Is there a message in this poem?</i>	[2] Underlying message		9.10 9.28 9.24	9.33 9.40	22
	<i>Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.</i>	[2] Underlying message		9.10 9.28 9.24 9.18	9.33 9.40 9.43	32
	<i>P.B. Q12 Why do you think the author wrote this story?</i>	[2] Underlying message		9.10 9.28 9.24 9.15	9.33 9.40	32
	<i>P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?</i>	[2] Underlying message		9.28	9.33	34
	<i>P.B. Q15 Do you think this story is telling you to take some action In your own life? Explain</i>	[2] Underlying message		9.28	9.33 9.40	29
	<i>S.S. Q15 Why do you think the author wrote this story?</i>	[2] Underlying message		9.28 9.7	9.33 9.40	24
	<i>S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?</i>	[2] Underlying message		9.10 9.28 9.26 9.24	9.33 9.40	34
<i>Gaps</i>	<i>P.B. Q8 Is there anybody in the story who should have a say but does not?</i>	Identifies [3] Absences / gaps		9.10 9.28 9.26 9.24 9.6	9.33 9.40	56
	<i>S.S. Q10 Is there anyone's point of view missing from the story?</i>		Intent of answer is unclear	9.10	9.33	7
<i>Similarities other texts</i>	<i>Poem Q9 Why do you think the author used this title for the poem?</i>		Unable to answer	9.10 9.26 9.24	9.33 9.40	24
	<i>P.B. Q2 Where do you think this story took place?</i>	Opinion given with evidence of other options considered		9.28	9.33 9.40	10
	<i>P.B. Q3 Have you read, seen or heard about a story like this before? Explain.</i>	Clear opinion offered with justification		9.10 9.24	9.33	14
	<i>S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?</i>	[4] Similarities with other texts		9.28 9.24 9.19	9.33 9.40	8
	<i>S.S. Q3 What is different in this story?</i>	[4] Similarities with other texts		9.28 9.24	9.33 9.40	28
<i>Own experiences / culture</i>	<i>Poem Q3 Could this really happen?</i>	[5] Own experiences / culture		9.10 9.24 9.28 9.7	9.33 9.20	25
	<i>Poem Q7 Do you think this is an important message? Explain</i>	[5] Own experiences / culture		9.10 9.24 9.28	9.33 9.20 9.40	18
	<i>P.B. Q4 Do you think this could really happen? Why do you think this?</i>	[5] Own experiences / culture		9.10 9.28	9.33 9.20 9.40	31
	<i>P.B. Q10 Who do you think should read this story? Why?</i>	[5] Own experiences / culture		9.10 9.24 9.28 9.15	9.33 9.20 9.40	54
	<i>P.B. Q11 Is there anyone in the story who needs help? Explain</i>	Clear opinion offered with justification		9.10 9.24 9.28	9.33	18

	P.B. Q14 Show the camera the most important double page in this book and explain why you think this.		Clear opinion offered with justification		9.10 9.28 9.6	9.33 9.40	24
	S.S. Q11 Is anyone treated unfairly in the story?		Opinion given with evidence of other options considered		9.10 9.28	9.33 9.40	35 717
	Total questions answered: 27	0	24	3		Total Av	26.5

6.2.2.1 Examples of multiple elements explored and metacognitive behaviours

Across the critical literacy questions analysed for this study, Sian gave no answers that included multiple critical literacy elements. Instead, her answers could be described as succinct and focused, avoiding the embellishment and extended details observed in other *talented readers*.

6.2.2.2 Examples of single elements explored and metacognitive behaviours

Twenty-four of Sian's twenty-seven responses reflected some exploration of one of McDaniel's element of critical literacy or offered an opinion accompanied with justification from the text or her own experiences. Figure 6.1 gives an example of Sian's pragmatic language style. Metacognitively, there are not many observable indicators of regulation other than external utterance of '*well*' suggesting cognitive reflection and regulation. In this example, as with many of her responses, there is no employment of the pronoun '*I*' that has been identified by this discourse tool as an observable indicator of a participant's capabilities and self-reflection. This is not to say this strategy is not part of Sian's repertoire; rather, it could be simply that this tool does not provide the necessary scope for her style of language usage.

Metacognitive Knowledge		POEM Q4 <i>Does anyone or anything have power and control in this situation?</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support	✓	Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 25			Self-corrects	Control
			Repeats a strategy to check accuracy	
			✓ Use of modal language	
Knowledge of Cognition		Regulation of Cognition		
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Evidence of external utterances reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task.		
9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative].		9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.		
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains		9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident).		
9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative].				
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
		[1] Questions Power		

Figure 6.1. DAF: Sian – Poem Question 4

The answers given in Figure 6.1 and Figure 6.2 reflect two aspects of Sian's development as a strategic and highly effective reader and responder. First, there is a level of confidence and monitoring of verbal accuracy evident in these two responses. In Figure 6.1 Sian employs modal language to refine her meaning and avoid simplistic generalisations. She modulates the noun 'everybody' which could have created a very generalised statement of fact with the adverb 'usually', monitoring the conclusiveness of the action. While a syntactically poor response, this is not uncommon in verbal responses (Afflerbach, 2002); however, the semantics employed reveal a higher order understanding of language and meaning.

Metacognitive Knowledge		POEM Q10 <i>Do you think the author is trying to make the readers think or act about a problem? Explain</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	I think she – I think he or she is, the author-um –I think the author was trying to make people not put plastic bags everywhere because it can kill the environment.	✓ Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support		✓ Self- commentates	
	Uses metalanguage in answer		✓ Detection of error/s during answer	
WORD COUNT: 32			✓ Self-corrects	Control
Knowledge of Cognition			✓ Repeats a strategy to check accuracy	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.18 Strategy knowledge evident through strong regulation of planning, monitoring and control			✓ Use of modal language	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	
		Identifies 2] Underlying message		

Figure 6.2. DAF: Sian – Poem Question 10

While there are moments of pausing, repetition and cognitive utterances in this response

(Figure 6.2), it is evident that these have been employed as meaning clarifiers, rather than as examples of indecision, or any suggestion that she is struggling to the answer the question.

Second, this response also demonstrates an understanding of authorial point of view.

Metacognitively, this example shows an understanding of point of view beyond her own (KoP).

From a critical literacy perspective, Sian is making a direct connection between the underlying message of the text and authorial intent. This demonstrates a developing ability to understand how an author constructs assumptions, and that text carries author-created meaning. In these two examples, there is some evidence to suggest that Sian's metacognitive and critical literacy abilities may be functioning at a level beyond her age peers in line with her above average reading ability. This will be discussed further at the conclusion of this chapter.

6.2.2.3 Examples of poor responses and metacognitive behaviours

Of the twenty-seven answers selected for analysis Sian only scored three *poor quality critical literacy responses*. Table 6.2 below displays these questions and answers.

Table 6.2

Sian: Collated Poor Responses

<i>Questions power</i>	<i>S.S. Q8 Who does not have power and control in this story? Why do you think this?</i>	I don't really think anyone didn't have control or power in the story
<i>Gaps</i>	<i>S.S. Q10 Is there anyone's point of view missing from the story?</i>	Hmmm, not really, maybe, I don't think.
<i>Similarities</i>	<i>Poem Q9 Why do you think the author used this title for the poem?</i>	Um – in the poem it says “all fluttering in the air” and air raid stuff – I'm not really sure why they called it that.

Sian's inability to interpret the significance of the title of the poem might be explained as a lack of domain-specific knowledge about the meaning behind an *air raid*. Without the knowledge or understanding of military history and terminology, this connection would be difficult. However, if Sian had deconstructed the two words separately an interpretation may have been accessed, as seen in other participants' responses. Some commonalities across these 'poor' answers include the employment of modal language, and using both the text and the question as strategies in trying to understand what is required to answer the question. It may be significant that in these examples, in contrast to more successful responses, Sian refers to her own capabilities, or inability to answer these questions

Table 6.3 provides an overview of Sian's responses within McDaniel's five critical literacy elements framework. The results in this table clearly show her ability to interact and successfully answer critical literacy questions.

Table 6.3

Sian: Overview of Critical Literacy Response Scores

McDaniel's Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power	6	0	5	0	1	0
[2] Underlying message	7	0	7	0	0	0
[3] Absences / gaps	2	0	1	0	0	1
[4] Similarities other texts	5	0	2	2	0	1
[5] Own experiences	7	0	4	3	0	0
Total	27	0	19	5	1	2

6.3.1 Metacognitive Behaviours

Sian's responses indicate a substantial number of metacognitive strategies were employed, as collated in Table 6.4. Her answers infer a developing knowledge of her own cognition and of the requirements of the knowledge domain of literacy, specifically reading, comprehension, language usage and verbal responses. While it was more difficult to observe Sian's regulatory behaviours according to the categories proffered by Tarricone's taxonomy and the DAF, the level of quality language intimates a level of automaticity exists, reflective of and expected in a fluent reader (Samuels et al., 2005).

Table 6.4

Sian: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition:	Evidence in Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	✓
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	✓
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	✓
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	✓
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	✓
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓

9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	-
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	✓

Adaptation of Tarricone (2001) Taxonomy of Metacognition

Sian completed both the MARSI and the MSI surveys (see Appendix G). According to her self-evaluation, Sian displays very little metacognition (see Table 6.5): this is in contrast to the observed metacognition behaviours in this study, collated in Table 6.4. The reason for this disparity may be explained either by Sian misreading the scale representations, a misunderstanding of the language of the questions, or an undervaluing of her own abilities and practices. Through the constraints of this study, i.e. the opportunity to discuss her answers with her has passed so it is not possible to confirm these suppositions. The MSI score is comparatively low and indicates Sian has a poor understanding of what is required by a reader before, during and after reading. Yet, the evidence from her reading behaviours observed in this study contradicts this result.

Table 6.5

Overview of MARSI and MSI Results

MARSI - SIAN		A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS	
[G] Global Reading Strategies		7	0	5	0	2	14
[P] Problem-Solving Strategies		2	0	4	1	1	8
[S] Support Reading Strategies		7	0	1	0	0	8
MSI	Answers Correct:	6	25	<i>Less than one quarter answered correct which would indicate developing metacognitive understanding.</i>			

Allan: Year 3 – Possibly Talented Reader

6.3 Introduction

Allan's conflicting standardised reading results situated him in Group 2 for this study. He was identified by his teacher as a talented reader, and by his own admission reads well: *I started reading well when I was in year 1. When I got to year 2 I got to the top level of reading with C., E., G. and me. It was awsome (sic) to be at that level.*

6.3.1 Reading Profile

A month prior to this study Allan scored at the 99th percentile in the TORCH test administered by his school. However, for this study his PAT-R results were at the 82nd percentile placing him in the top 18% of his age peers, but out of contention to be considered ‘talented’ by Gagné’s (2008) definition. Having indicated that he was feeling well on the day of testing, there is no overt evidence for the disparity in results.

Allan’s ERAS survey revealed that he is a positive recreational reader; however, he prefers playing to reading and seems to have a fairly specific set of preferred reading materials as he does not like *reading different kinds of books*. While he does enjoy *reading in school, taking reading tests and learning from a book*, he does not enjoy *using a dictionary, completing reading worksheets, reading schoolbooks or using a dictionary*.

The parent questionnaire indicated that Allan was read to ‘*most nights*’ before he started school, and that his father still reads to him books such as ‘Harry Potter’, ‘Chronicles of Narnia’ and the Terry Pratchett books, although frequency was not indicated. As a reader, his mother described Allan as ‘*ambitious, with a daily habit*’. He began to read without assistance at age 6 and learned to read ‘*mainly through the kinder programme*’. Allan completed all three filming sessions, and a discussion of these results is presented in the next section.

6.3.2 Overview of Critical Literacy and Metacognitive Performance

Allan's responses are collated in Table 6.6 reviewing his critical literacy results and the Knowledge of Cognition (KoC) and Regulation of Cognition (RoC) strategies observed during these responses.

Table 6.6

Allan: Overview of Critical Literacy and Metacognitive Performance

Critical Literacy Questions	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Poor Critical Literacy quality answer	KoC	KoR	Word Count
Questions Power	Poem Q4: Does anyone or anything have power and control in this situation?	[1] Questions Power		9.10 9.28	9.33	4
	Poem Q5: Who does not have control?		Opinion offered without justification	9.28	-	2
	P..B Q6 Who has power and control in this story? Why do you think this?	Clear opinion offered with justification		9.6 9.10 9.28	9.33	15
	P.B. Q7 Who does not have power and control in this story? Why do you think this?	[1] Questions Power		9.10 9.28	9.33	9
	S.S. Q7 Who has the power and control in this story? Why do you think this?	[1] Questions Power		9.10 9.28 9.26	9.33	42
	S.S. Q8 Who does not have power and control in this story? Why do you think this?	[1] Questions Power		9.24 9.28	9.33	63
Unspoken message	Poem Q6: Is there a message in this poem?	[2] Underlying message		9.8 9.10 9.28	9.20 9.33 9.42	29
	Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.	[2] Underlying message		9.8 9.10 9.28	9.33 9.42	35
	P.B. Q12 Why do you think the author wrote this story?	Opinion given with evidence of other options considered		9.28	9.33	9
	P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?		Unable to answer	9.10	9.33	21
	P.B. Q15 Do you think this story is telling you to take some action in your own life? Explain	Opinion given with evidence of other options considered		9.8 9.10 9.28	9.33	24
	S.S. Q15 Why do you think the author wrote this story?	[2] Underlying message		9.8 9.28 9.10 9.24	9.33	31
Gaps	S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?	[2] Underlying message [5] Own experiences		9.8 9.10	9.33 9.43	26
	P.B. Q8 Is there anybody in the story who should have a say but does not?	[3] Absences / gaps		9.10 9.26 9.28	9.33 9.43	44
	S.S. Q10 Is there anyone's point of view missing from the story?	[3] Absences / gaps		9.28	9.33	11
Similarities other texts	Poem Q9 Why do you think the author used this title for the poem?		Unable to answer	9.10	9.33	7
	P.B. Q2 Where do you think this story took place?	[4] Similarities [5] Own experiences		9.10 9.8	9.33	40
	P.B. Q3 Have you read, seen or heard about a story like this before? Explain.	[4] Similarities		9.10 9.8	9.33	15
	S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?	[4] Similarities		9.28	9.20	8
	S.S. Q3 What is different in this story?	[4] Similarities		9.19 9.28	9.20 9.33	40
Own experiences / culture	Poem Q3 Could this really happen?		Opinion given with evidence of other options considered	9.28	9.33 9.43	9
	Poem Q7 Do you think this is an important message? Explain	[5] Own experiences		9.15 9.18 9.24 9.28	9.33 9.43	64
	P.B. Q4 Do you think this could really happen? Why do you think this?		Opinion given with evidence of other options considered	9.28	9.33	32
	P.B. Q10 Who do you think should read this story? Why?	[5] Own experiences [2] Underlying message		9.8 9.10 9.28	9.33	29

P.B. Q11 Is there anyone in the story who needs help? Explain		[5] Own experiences		9.28	9.33	18
P.B. Q14 Show the camera the most important double page in this book and explain why you think this.		Clear opinion offered with justification		9.28 9.26	9.33 9.20	39+
S.S. Q11 Is anyone treated unfairly in the story?		Clear opinion offered with justification		9.10 9.28	9.33	12
Total questions answered: 27	3	21	3	695 Total Av: 26		

6.3.2.1 Examples of multiple elements explored and metacognitive behaviours

Figure 6.3 displays one of Allan's stronger responses to a critical literacy question in the analysed series.

Metacognitive Knowledge		PICTURE BOOK Q2: <i>Where do you think this story took place?</i>	Metacognitive Regulation			
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		✓ External utterance suggest inner thinking before answering fully		Planning	
KoT	Completes requirements of task i.e. reads question and answers it		✓ Cognitive processing evident via pausing		Monitor	
KoS	Elaborates / draws on text evidence to support		Self- commentates			
	Uses metalanguage in answer		Detection of error/s during answer			
WORD COUNT: 40			Self-corrects		Control	
Knowledge of Cognition			✓ Repeats a strategy to check accuracy			
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative].			✓ Use of modal language			
Multiple Critical Literacy elements explored		Regulation of Cognition	9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of repetition strategies to moderate understanding of task requirements. 9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.			
[4] Similarities &[5] Own experiences						
Single Critical Literacy element explored			Poor Critical Literacy quality answer			

Figure 6.3. DAF: Allan – Picture Book Question 2

In this response Allan reveals an understanding of the underlying metaphor of the picture book, that being the arrival of Europeans in Australia and the plight of the Indigenous peoples as a direct result. He expresses some doubt about his interpretation both in this response as well as in the following question (not included). In later responses in this series, he reverts back to a more literal understanding of the book, discussing the '*page of civilization of rabbits*' (see Figure 6.4), which indicates he may not have completely understood the metaphor throughout the reading process. However, because in question 2 (Figure 6.3) he has made the connection with the historical context, and situated this within his own experiences of this event, this answer scored as employing multiple critical literacy elements.

Metacognitive Knowledge		PICTURE BOOK Q14: Show the camera the most important double page in this book and explain why you think this.	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it	Response: I'm just going to try and find it. [pp grey page "rabbits, rabbits, rabbits ..."] Here – it showing they civilized our world and took over the area. And that's how, also, it also means that – <i>reads the words on the page</i> – it's a page of civilization of rabbits. It's a bit weird	Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language Monitor
KoS	Elaborates / draws on text evidence to support		
	Uses metalanguage in answer		
WORD COUNT: 39+			
Knowledge of Cognition		Regulation of Cognition	
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.26 Task sensitivity reflected through an elaborated answer demonstrates knowledge of appropriate and applicable strategies and subsequent strategy application in completing the task [Procedural / Strategy]		9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task. 9.20 Explicit knowledge of textual support prompts implicit representations and vice versa.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer
		Clear opinion offered with justification	

Figure 6.4. DAF: Allan – Picture Book Question 14

6.3.2.2 Examples of single elements explored and metacognitive behaviours

Twenty-one of Allan's twenty-seven responses evidenced his ability to successfully respond to the critical literacy questions presented to him. The quality of these responses shows a developing depth of understanding of real world and text connections. Eleven of these responses directly address the critical literacy element being discussed (see Figures 6.5 and Figure 6.6).

Metacognitive Knowledge		SHORT STORY Q8: Who does not have power or control in this story? Why do you think this??	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it	Response: I think the grandma doesn't have control in this, in the story because she had short eyesight and that's a bit of a disadvantage - and so – she could easily get eaten by a wolf she's very short sighted and she also gets gobbled up as soon as she turns away, so I don't think she has that much power in the story.	Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language Monitor
KoS	Elaborates / draws on text evidence to support		
	Uses metalanguage in answer		
WORD COUNT: 63			
Knowledge of Cognition		Regulation of Cognition	
9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.26 Task sensitivity reflected through an elaborated answer demonstrates knowledge of appropriate and applicable strategies and subsequent strategy application in completing the task [Procedural / Strategy] 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Goal specification and planning demonstrated through process monitoring, monitoring clarity and accuracy through cognitive pausing, expression of thought, detection of errors, self-correction &/or repetition and the use of modal language to modulate expression and ideas expressed.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer
		[1] Questions Power	

Figure 6.5. DAF: Allan – Short Story Question 8

Figure 6.5 displays a second example of Allan addressing the specific critical literacy element; however, it also reveals an advanced understanding of purpose and audience and a developing awareness of gender stereotyping, a significant understanding for a Year 3 student.

Metacognitive Knowledge		SHORT STORY Q15 <i>Why do you think the author wrote this story?</i>	Metacognitive Regulation		
KoP	KoT		Planning	Monitor	
Refers to own capabilities, strengths and weaknesses .(Pink)	✓	<i>Response:</i> I think he wrote it to copy Little Red Riding Hood – to make it a good thing. To make it like a boy’s version – a better version as they would say.	✓ External utterance suggest inner thinking before answering fully	Control	
Completes requirements of task i.e. reads question and answers it	✓		✓ Cognitive processing evident via pausing	Planning	
Elaborates / draws on text evidence to support			Self- commentates	Monitor	
Uses metalanguage in answer	✓		Detection of error/s during answer	Control	
WORD COUNT: 31			Self-corrects		
Knowledge of Cognition			✓ Repeats a strategy to check accuracy		
9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative].			✓ Use of modal language		
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			Regulation of Cognition		
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person].			9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one’s knowledge / understanding of the requirements of the task.		
9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task].			9.33 Use of modal language and repetition to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.		
<i>Multiple Critical Literacy elements explored</i>			<i>Poor Critical Literacy quality answer</i>		
			[2] Underlying message		

Figure 6.6.DAF: Allan – Short Story Question 15

The remaining ten responses in this category address the requirements of the tasks and are justified either by his opinion or with evidence of other options considered. These answers reflect divergent thinking using evidence beyond the text (see Figure 6.7).

Metacognitive Knowledge		PICTURE BOOK Q4: <i>Do you think this could really happen? Why do you think this?</i>	Metacognitive Regulation		
KoP	KoT		Planning	Monitor	
Refers to own capabilities, strengths and weaknesses .(Pink)		<i>Response:</i> We’re not the only ones out there – there are probably other aliens, wild things that probably will come to our earth some day. Though they’re probably not that good in technology either	✓ External utterance suggest inner thinking before answering fully	Control	
Completes requirements of task i.e. reads question and answers it	✓		✓ Cognitive processing evident via pausing	Planning	
Elaborates / draws on text evidence to support			Self- commentates	Monitor	
Uses metalanguage in answer			Detection of error/s during answer	Control	
WORD COUNT: 32			Self-corrects		
Knowledge of Cognition			✓ Repeats a strategy to check accuracy		
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			✓ Use of modal language		
Regulation of Cognition			Regulation of Cognition		
9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one’s knowledge / understanding of the requirements of the task.			9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.		
<i>Multiple Critical Literacy elements explored</i>			<i>Poor Critical Literacy quality answer</i>		
			Opinion given with evidence of other options considered		

Figure 6.7.DAF: Allan – Picture Book Question 4

6.3.2.3 Examples of poor responses and metacognitive behaviours

Three of the twenty-seven answers were identified as ‘poor’ in addressing the critical literacy criteria, with two questions unable to be answered and one answer offered without justification or discussion (see Table 6.7).

Table 6.7

Allan: Collated Poor Responses

Questions Power	Poem Q5: Who does not have control?	No one.
Unspoken Message	P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?	I think his opinion about the situation in the story is – inaudible – um – I don't know – I don't know about that question.
Similarity	Poem Q9 Why do you think the author used this title for the poem?	Well –I don't know- saying it again.

The two responses that acknowledge his inability to answer these questions reflect Allan’s employment of regulatory strategies through external utterances and pausing reflecting some cognitive processing. In response to the Picture Book question 13, Allan reiterates the question in an attempt to find an answer, reflecting domain-specific knowledge of the task and self-regulation. Despite these strategies, he comes to the realisation that he is unable to solve this problem and states his inability to do so.

Table 6.8 collates Allan’s responses according to McDaniel’s five critical literacy categories showing the degree of success across each.

Table 6.8

Overview of Critical Literacy Response Scores

McDaniel’s Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power	6	0	4	1	0	1
[2] Underlying message	7	1	3	2	0	1
[3] Absences / gaps	2	0	2	0	0	0
[4] Similarities other texts	5	1	3	0	0	1
[5] Own experiences	7	1	2	4	0	0
Total	27	3	14	7	0	3

Allan clearly has a good understanding of the requirements of the tasks and answers most questions with justification from the texts or his own experiences and worldviews. He experienced little difficulty in answering most of the critical literacy questions, demonstrating transferrable domain-specific problem solving strategies.

6.3.3 Metacognition Profile

Table 6.9 provides an overview of the specific metacognitive behaviours that were observed across Allan's twenty-seven analysed responses. This measure shows him utilising many of Tarricone's identified knowledge (KoC) and regulatory (KoR) strategies to answer the critical literacy questions presented to him. He confidently utilises reflection, monitoring and self-regulation strategies related to well-developed Metacomprehension skills for his age (Tarricone assertion 9.69). Again, it should be stressed that the absence of a tick against a strategy in the table below is not an indication of whether this strategy exists or not in Allan's metacognition repertoire, only that the strategy was not observed during this selection of analysed responses.

Table 6.9

Allan: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition:	Evidence in Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	-
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	-
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	✓
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	✓
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓

9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	✓
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	✓
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	✓

Adapted from Tarricone (2001) Taxonomy of Metacognition

Allan only completed the MARSI survey and not the MSI questionnaire due to class activities that impacted on a reduced time allotment for this data collection session. The summary of his MARSI results is displayed in Table 6.10, with the full survey presented in Appendix G. This exercise suggests Allan has a realistic understanding of the strategies he employs during reading. As stated in the notes below the negative scores were allocated to strategies that older students might employ such as *note taking*, *paraphrasing* and *summarising*. However, other important strategies such as *reading slowly and carefully to ensure understanding*, and *adjusting reading speed according to purpose* tend to suggest Allan may hold specific epistemic beliefs about how reading is conducted by ‘good’ readers, i.e. good readers read quickly. Again, this assumption cannot be explored further due to the constraints of the study.

Table 6.10

Allan: Overview of MARSI and MSI Results

MARSI - ALLAN	A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS	
[G] Global Reading Strategies	3	2	4	2	3	14
[P] Problem-Solving Strategies	1	3	1	0	3	8
[S] Support Reading Strategies	5	0	1	1	1	8
MSI Answers Correct:	25	<i>NOT COMPLETED</i>				

Deciding if Allan’s reading ability should be categorised as ‘talented’ has not been unequivocally proven through the data collected by this study. Some of Allan’s responses

indicate advanced vocabulary, world-views and understandings that may be considered advanced in a Year 3 student. He is performing at a competent reading level, but it is unclear if the 99% score of the TORCH test is a more accurate reflection of his reading abilities than the 82% score of the PAT-R test.

Leila: Year 4 – Typical Reader

6.4 Introduction

A limitation of this study has been the small number of typical readers who accepted the invitation to join the study. Leila was the only student across the two schools in Stage 2 who agreed to participate. Consequently, the data are limited due to absences and the non-return of the parent questionnaire.

6.4.1 Reading Profile

At the time of the study Leila was 9 years 4 months and in the final month of Year 4. She was absent on the day the PAT-R standardised reading test was administered. At the beginning of the year, Leila had scored 65% achievement in the school administered TORCH test. The criteria of this test claim that the results remain valid for the following twelve months. In class reading groups, Leila had been in the ‘middle’ ability group throughout the year.

Leila’s ERAS results indicate that she has very positive attitudes towards recreational reading marking five of the ten categories as favourite activities (see Appendix G). In the academic reading section Leila’s results were spread evenly across the four levels of enjoyment. While she very much enjoys *reading stories in class*, she scored reading *tests, dictionary work*, and *reading worksheets* at the lowest end of the scale. As the parent questionnaire was not returned, background information is not available with regards to her early development as a reader.

6.4.2 Overview of Critical Literacy and Metacognitive Performance

Leila did not complete the picture book tasks, as she was absent from school on the day of testing. Table 6.11 overviews the critique of her completed responses, the metacognitive

behaviours observed during each response and levels of success in answering the critical literacy questions.

Table 6.11

Overview of Critical Literacy and Metacognitive Performance

<i>Critical Literacy Questions</i>	<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	<i>KoC</i>	<i>KoR</i>	<i>Word Count</i>
<i>Questions Power</i>	PoemQ4: Does anyone or anything have power and control in this situation?		Opinion offered without justification	9.28		1
	Poem Q5: Who does not have control?		Unable to answer		9.33	1
	P..B Q6 Who has power and control in this story? Why do you think this?	<i>ABSENT</i>				
	P.B. Q7 Who does not have power and control in this story? Why do you think this?					
	S.S. Q7 Who has the power and control in this story? Why do you think this?		Opinion offered without justification		9.33	15
	S.S. Q 8 Who does not have power and control in this story? Why do you think this?		Clear opinion offered with justification	9.28		7
	Poem Q6: Is there a message in this poem?	[2] Underlying message		9.8 9.28		9
<i>Unspoken message</i>	Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.		Intent of answer is unclear		9.33	8
	P.B. Q12 Why do you think the author wrote this story?	<i>ABSENT</i>				
	P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?					
	P.B. Q15 Do you think this story is telling you to take some action In your own life? Explain					
	S.S. Q15 Why do you think the author wrote this story?		Unable to answer	9.10	9.33	3
	S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?		Unable to answer	9.10		2
	P.B. Q 8 Is there anybody in the story who should have a say but does not?	<i>ABSENT</i>				
<i>Gaps</i>	S.S. Q10 Is there anyone's point of view missing from the story?	[3] Absences / gaps		9.28	9.33	13
	Poem Q9 Why do you think the author used this title for the poem?		Opinion given with evidence of other options considered	9.28	9.33	14
	P.B. Q2 Where do you think this story took place?	<i>ABSENT</i>				
	P.B. Q3 Have you read, seen or heard about a story like this before? Explain.					
	S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?	[4] Similarities		9.28		5
	S.S. Q3 What is different in this story?	[4] Similarities		9.28	9.33	14
	Poem Q3 Could this really happen?		Opinion offered without justification	9.10	9.33	8
<i>Own experiences/ culture texts</i>	Poem Q7 Do you think this is an important message? Explain		Opinion given with evidence of other options considered	9.28	9.33	14
	P.B. Q4 Do you think this could really happen? Why do you think this?	<i>ABSENT</i>				
	P.B. Q10 Who do you think should read this story? Why?					
	P.B. Q11 Is there anyone in the story who needs help? Explain					
	P.B. Q14 Show the camera the most important double page in this book and explain why you think this.					
	S.S. Q11 Is anyone treated unfairly in the story?		Opinion offered without justification	9.10 9.28	9.33	6
	Total questions answered: 15	0	7	8	104	TOTAL AV: 7*

* Average is based on only the 15 responses provided by Leila.

6.4.2.1 Examples of multiple elements explored and metacognitive behaviours

Leila did not provide any responses that met the criteria for this category.

6.4.2.2 Examples of single elements explored and metacognitive behaviours

Four of the eight stronger responses given by Leila directly addressed the particular critical literacy element category. These included identifying absences in the text, the underlying message and similarities with other texts. An example is given in Figure 6.8.

Metacognitive Knowledge		POEM Q6 <i>Is there a message in this poem?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	<i>Response:</i> Yes, it's telling us not to pollute the world.	External utterance suggest inner thinking before answering fully Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it ✓		Planning Monitoring Control
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		
WORD COUNT: 9			
Knowledge of Cognition 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored [2] Underlying message	Poor Critical Literacy quality answer

Figure 6.8.DAF: Leila – Poem Question 6

The other four responses showed an awareness of a level of domain-knowledge required by justifying the response using the text or real-world evidence. Figure 6.9 shows Leila drawing on her experiences to problem solve, specifically working out how the title of the poem ‘Air Raid’ relates to the poem. Compared with Sian, the Year 3 *talented reader* who was not able to make the connection, Leila demonstrates divergent thinking in this example.

Metacognitive Knowledge		Poem Q9: <i>Why do you think the author used this title for the poem?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	<i>Response:</i> Because, it's sort of like airplanes, or an air raid, of plastic and stuff.	External utterance suggest inner thinking before answering fully Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it ✓		Planning Monitoring Control
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		
WORD COUNT: 14			
Knowledge of Cognition 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored Opinion given with evidence of other options considered	Poor Critical Literacy quality answer

Figure 6.9.DAF: Leila – Poem Question 9

In both of these examples Leila demonstrates an understanding of the task goals and confidently answers the questions. There is on the one hand, however, little overt evidence of

metacognitive behaviours beyond this to indicate a conscious employment of KoC and RoC strategies, other than the employment of modal language in the second example. On the other hand, this modal use of language does not appear to have been employed to modify clarity of meaning, but rather to indicate a level of uncertainty.

6.4.2.3 Examples of poor responses and metacognitive behaviours

Eight of Leila's fifteen responses are classified as 'poor', with regards to specifically addressing the elements of critical literacy as shown in Table 6.12.

Table 6.12

Leila: Collated Poor Responses

Questions	Leila's Answers	C.L Assessment
PoemQ4: Does anyone or anything have power and control in this situation?	No	Opinion offered without justification
Poem Q5: Who does not have control?	Ah	Unable to answer
S.S. Q7 Who has the power and control in this story? Why do you think this?	I think the Little Red does, um, and I'm not sure how to explain it	Opinion offered without justification
Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.	Yes, because um, because it might save the ... <i>Answer not completed</i>	Intent of answer is unclear
S.S. Q15 Why do you think the author wrote this story?	Um, not sure	Unable to answer
S.S. Q16 Do you think the author had a message for the readers in telling this story? IF so, what do you think it is?	Not sure	Unable to answer
Poem Q3 Could this really happen?	Yes, because, um –because - I'm not really sure	Opinion offered without justification
S.S. Q11 Is anyone treated unfairly in the story?	Um, no I don't think so	Opinion offered without justification

These responses indicate that Leila struggled to fulfil the requirements of these specific tasks, possibly due to the unfamiliar question format and the language employed by the critical literacy questions. She appeared to have difficulty discussing power and control, and authorial intent. She showed no difficulty or reticence in declaring her inability to answer questions and utilises regulatory procedures, such as external utterances and pausing, that were similar to those employed by her peers in Groups 1 and 2. In contrast, while she did exhibit some problem solving strategies, these have not been employed as frequently as her peers in this study. Also,

compared with these peers, her answers did not show evidence of reasoning through extended discussion of reasoning or the employment of the wording of a question within her responses.

6.4.3 Metacognition Profile

Table 6.13 reveals the levels of success Leila experienced in answering the critical literacy elements. The table shows that she experienced a level of difficulty giving eight poor or unsuccessful answers compared with seven successful answers.

Table 6.13

Leila: Overview of Critical Literacy Response Scores

McDaniel's Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power	4	0	0	1	2	1
[2] Underlying message	4	0	1	0	0	3
[3] Absences / gaps	1	0	1	0	0	0
[4] Similarities other texts	3	0	2	1	0	0
[5] Own experiences	3	0	0	1	2	0
Total	15	0	4	3	4	4

Table 6.14 indicates very few metacognitive strategies have been observed in this cross section of Leila's responses. Again, this is not to say conclusively that Leila does not possess these strategies, simply that only a small number were consistently observed across her fifteen responses in this study.

Table 6.14

Leila: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition:	Evidence in Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	-
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	-
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	-
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	-
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	-
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	-
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	-
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	-
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	-
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	-
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	-
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	-

Because she was absent for the MIS procedure, Table 6.15 summarises Leila's results only from the MARSI self-survey. In this evaluation, Leila shows a mixture of astute and questionable observations about her own reading practices.

Table 6.15

Leila: Overview of MARSI and MSI Results

MARSI - LEILA	A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS	
[G] Global Reading Strategies	1	0	6	4	3	14
[P] Problem-Solving Strategies	1	2	2	2	1	8
[S] Support Reading Strategies	4	1	3	0	0	8
MSI						
Answers Correct:	25					<i>NOT COMPLETED</i>

Leila indicated with either ‘always’ or ‘usually’ a number of strategies that are associated with fluent reading practices (see Appendix G). These included *having a purpose in mind when reading, guessing what material is about when reading, guessing the meaning of unknown words or phrases and using pictures in the text to increase her understanding*. As with the previous two case studies in this chapter, Leila scores the strategies that are more commonly employed by older readers in the ‘never’ category. These included *taking notes while reading to help understanding and paraphrasing to help understanding*. At the same time she also scores ‘never’ against strategies that would enable her to be more effective and efficient in her reading such as *stopping from time to time to think about what is being read, when text becomes difficult, reflecting on important information in the text and trying to get back on track when loosing concentration*.

These observations indicate that Leila has employed a level of self-reflection in completing the MARSI survey that correlates with her reading abilities. If, as a *typical reader*, Leila is revealing a level of self-reflective ability, this could be used as a future teaching opportunity to address some of the strategies she identifies as ‘never’ or ‘occasionally’ employing in her reading practices. While the effectiveness of the MARSI survey is questioned in some results across this study, individual strategies could be presented to students in classroom activities encouraging self-reflection and focused discussion.

This chapter presented the Stage 2 case study results for Sian, Allan and Leila. The chapter began with a justification of the selection process for inclusion of each participant as a case study for this study. A reading profile was established based on standardised reading results and parental interviews. A table was presented that overviewed each participant's performance in aspects of critical literacy and metacognitive behaviours. Examples of multiple, single and poor metacognitive responses were presented and justified. An overview of the metacognitive behaviours observed were presented in table form and discussed for each participant and then compared with the results of MARSI and MSI surveys where appropriate.

CHAPTER SEVEN: STAGE 3 CASE STUDIES

7.1 Introduction

The largest group in this study was the Stage 3 cohort and this chapter presents a cross section of each of the three groups, talented, possibly talented and typical readers, from the participants who participated in this study from Years 5 and 6: Isla, Ronald, Jacob and Connor.

7.1.1 Selection Process and Justification of Choice

The selection criteria for the case studies presented in this chapter varied across the groups. The two Group 1 talented readers, Isla and Ronald, were selected for these case studies as they scored the highest results in the PAT-R standardised reading test across Stage 3. Jacob was selected from Group 2, that being a possible talented reader, despite only completing two of the three texts, as this provided more data than the other possible candidate. Finally, Connor from Year 6 was selected to represent Group 3 typical readers as he was the only participant in this group to complete all three texts.

Isla: Year 5 – Talented Reader

7.2 Introduction

At the time of testing Isla was aged 10 years and 2 months and in the final month of Year 5. According to her biography she has lived in four continents, eight houses and attended six different schools, as her father is in the Royal Australian Air Force and the family has moved extensively because of his postings. Isla, as previously mentioned, is the sister of Sarah, the Stage 1 Group 1 talented reader case study. The girls had only just started in this school at the beginning of the year.

7.2.1 Reading Profile

In February Isla scored 81% in the school-administered TORCH standardised reading test. She was placed in the top reading group throughout the year. In the PAT-R standardised reading

test administered within this study in November, she scored 97%, placing her well within the limits of Gagné's (2008) definition of a talented reader.

In her ERAS survey Isla scored all ten recreational reading activities at the highest level of enjoyment. While she scored reading at school as 'mostly enjoyable', it did not compare to the same level of enthusiasm she had for recreational reading. Her least favourite activity at school was identified as reading out aloud in class, and this may be related to a level of self-consciousness about her American accent.

Isla's mother noted that she did not begin reading until she was 6 years old. She believes this was partly due to her bilingual start to language learning:

[Isla] was born in Germany and was bilingual until we moved her to (an) American kindergarten. I think having the ability to switch between the languages at a young age only helped her understanding of "symbols" as meaning words. It probably slowed her down at first (which is why I think she didn't start reading earlier), but it has only helped her language and cognitive abilities since.

Both parents read daily to Isla and her younger four sisters since they were babies, and '*there are books on shelves all over the home, and magazines in the bathroom. We all read a lot!*' While her parents no longer read to her, her mother still reads, *everything she reads though, and we talk about characters and storylines*. For this study, Isla completed all three filmed sessions, and these results are presented and discussed in the following sections.

7.2.2 Overview of Critical Literacy and Metacognitive Performance

Table 7.1 collates the results of Isla's responses to the critical literacy questions selected for analysis in this study and includes the identified Knowledge of Cognition (KoC) and Regulation of Cognition (RoC) behaviours observed, represented by Tarricone's (2011) Taxonomy numeral coding. A discussion of these results follows.

Table 7.1

Isla: Overview of Critical Literacy and Metacognitive Performance

<i>Critical Literacy Questions</i>	<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	<i>KoC</i>	<i>KoR</i>	<i>Word Count</i>
<i>Questions Power</i>	<i>PoemQ4: Does anyone or anything have power and control in this situation?</i>	[1] Questions Power		9.6 9.10 9.15 9.24 9.26 9.28	9.20 9.40 9.33 9.42	88
	<i>Poem Q5: Who does not have control?</i>	[1] Questions Power 2] Underlying message		9.24 9.28	9.33	28
	<i>P..B Q6 Who has power and control in this story? Why do you think this?</i>	[1] Questions Power		9.24 9.26 9.28	9.33	51
	<i>P.B. Q7 Who does not have power and control in this story? Why do you think this?</i>	[1] Questions Power		9.8 9.24 9.26 9.28	9.20 9.33 9.40	28
	<i>S.S. Q7 Who has the power and control in this story? Why do you think this?</i>	[1] Questions Power		9.7 9.10 9.24 9.26 9.28	9.20 9.33 9.40	74
	<i>S.S. Q8 Who does not have power and control in this story? Why do you think this?</i>	[1] Questions Power		9.28	9.33	12
<i>Unspoken message</i>	<i>Poem Q6: Is there a message in this poem?</i>	[2] Underlying message		9.7 9.10 9.24 9.26 9.28	9.20 9.33 9.40	37
	<i>Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.</i>	[2] Underlying message [5] Own experiences		9.8 9.10 9.24 9.28	9.33	25
	<i>P.B. Q12 Why do you think the author wrote this story?</i>	[2] Underlying message [5] Own experiences		9.8 9.10 9.24 9.28	9.33	56
	<i>P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?</i>	[2] Underlying message		9.10 9.24 9.28	9.33	39
	<i>P.B. Q15 Do you think this story is telling you to take some action In your own life? Explain</i>	[2] Underlying message [5] Own experiences		9.7 9.8 9.10 9.24 9.28 9.31	9.33 9.40 9.43	43
	<i>S.S. Q15 Why do you think the author wrote this story?</i>	Clear opinion offered with justification		9.10 9.18 9.28	9.33 9.42	39
	<i>S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?</i>		Opinion offered without justification	9.10 9.24 9.28	9.33	27
<i>Gaps</i>	<i>P.B. Q 8 Is there anybody in the story who should have a say but does not?</i>	[3] Absences / gaps		9.6 9.10 9.26 9.28	9.20 9.33	60
	<i>S.S. Q10 Is there anyone's point of view missing from the story?</i>	[3] Absences / gaps		9.8 9.15 9.28	9.33	36
<i>Similarities other texts</i>	<i>Poem Q9 Why do you think the author used this title for the poem?</i>		Not completed			
	<i>P.B. Q2 Where do you think this story took place?</i>	[4] Similarities [5] Own experiences		9.8 9.10 9.18 9.15 9.26 9.31	9.20 9.33 9.40 9.43	144
	<i>P.B. Q3 Have you read, seen or heard about a story like this before? Explain.</i>	[4] Similarities [5] Own experiences		9.10 9.15 9.28	9.33	81
	<i>S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?</i>	[4] Similarities		9.28	9.33	33
	<i>S.S. Q3 What is different in this story?</i>	[4] Similarities		9.28 9.24	9.33	42
<i>Own experi</i>	<i>Poem Q3 Could this really happen?</i>	[5] Own experiences [2] Underlying message		9.8 9.10 9.24 9.28	9.33	53

Poem Q7 Do you think this is an important message? Explain		[5] Own experiences		9.8 9.10 9.24 9.28	9.33	39
P.B. Q4 Do you think this could really happen? Why do you think this?		[5] Own experiences		9.8 9.10 9.24 9.28	9.33	40
P.B. Q10 Who do you think should read this story? Why?		[5] Own experiences		9.8 9.10 9.24 9.28	9.33	33
P.B. Q11 Is there anyone in the story who needs help? Explain		[5] Own experiences		9.10 9.28	9.33 9.43	39
P.B. Q14 Show the camera the most important double page in this book and explain why you think this.		[4] Similarities		9.10 9.28	9.20 9.33	48
S.S. Q11 Is anyone treated unfairly in the story?		[5] Own experiences		9.8 9.10 9.19 9.24 9.28	9.33	29
Total questions answered: 26	7	17	1	1224	Total Av: 47	

Table 7.2 overviews Isla's responses using McDaniel's five critical literacy elements.

This table clearly shows her ability to effectively interact with and successfully respond to these types of questions with a strong ability to answer critical literacy questions employing either single or multiple elements within the answer.

Table 7.2

Isla's Critical Literacy Performance

McDaniel's Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power	6	1	5	0	0	0
[2] Underlying message	7	3	2	1	1	0
[3] Absences / gaps	2	0	2	0	0	0
[4] Similarities other texts	4	2	2	0	0	0
[5] Own experiences	7	1	6	0	0	0
Total	26	7	17	1	1	0

7.2.2.1 Examples of multiple elements explored and metacognitive behaviours

Just under a quarter of Isla's responses reflected multiple critical literacy elements within her responses. Figures 7.1, 7.2 and 7.3 show a cross section of these types of responses displaying the metacognitive behaviours observed during each of these answers.

Metacognitive Knowledge		PICTURE BOOK Q15: Do you think the story is telling you to take some action in your own life? Explain.	Metacognitive Regulation	
KoP KoT	Refers to own capabilities, strengths and weaknesses .(Pink)		External utterance suggest inner thinking before answering fully	Planning
KoT KoS	Completes requirements of task i.e. reads question and answers it		Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalinguage in answer		Detection of error/s during answer	
WORD COUNT: 43		<i>Response:</i> <i>Considered answer for 6 seconds before beginning</i> As a big sister (<i>smiles</i>)um yeah I think that - it probably does – to stick up for yourself. If you're being bullied, the kangaroos are being bullied by the rabbits, stick up for yourself. That's what I think the story's telling us. (<i>Picks up book and looks at cover before going onto next question</i>)	Self-corrects Repeats a strategy to check accuracy	Control
Knowledge of Cognition 9.7 Declarative knowledge evident through observed domain knowledge and cognitive knowledge 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.14 Task knowledge and sensitivity supported by reflection demonstrated through considered pauses and thoughtfulness at the start of response. It acknowledges an awareness of task complexity, and attempts to facilitate planning to meet task demands [Declarative / Task]. 9.24 Employment of appropriate metalinguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.31 Context and contextual conditions influence strategy use, transfer and regulation [Conditional / Strategy].		Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task. 9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident). 9.43 Internal verbalisation expressed externally includes personal beliefs		
<i>Multiple Critical Literacy elements explored</i> [2] Underlying message [5] Own experiences		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	

Figure 7.1.DAF: Isla – Picture Book Question 15

In this response (Table 7.1) Isla connects the demands of the task with her own life experiences as she reflects on the implications and associations of the underlying message through the eyes of a ‘big sister’. This demonstrates a degree of critical literacy competency that has been self-initiated rather than a product of overt instruction. As reflected in the multiple metacognitive behaviours identified in this response, Isla confidently and competently employs both knowledge and regulation of cognition strategies as she completes this task.

Metacognitive Knowledge		PICTURE BOOK Q2: Where do you think this story took place?	Metacognitive Regulation
Kap	Refers to own capabilities, strengths and weaknesses .(Pink)		External utterance suggest inner thinking before answering fully Planning
KOT	Completes requirements of task i.e. reads question and answers it		Cognitive processing evident via pausing Monitor
Kos	Elaborates / draws on text evidence to support Uses metalanguage in answer	<p><i>Response:</i></p> <p>Well(<i>picks up book</i>)um by looking at some of the pictures and also right here – this picture (<i>first page spread</i>)um – ‘the rabbits came many grandparents ago’ many generations ago – um – there’s the snake and the toad, you don’t usually find snakes in America, um you don’t (<i>goes to next page</i>)you don’t find these types of lizards in America either – so doubt it’s America. Also these creatures (<i>points to numbats at top of page</i>)look a bit like kangaroos, and as I think they’re pointing at the rabbits um and they have – spears I think –probably Australia – and also –(<i>goes to another page</i>) another thing is I think they’re kangaroos, long tail kangaroos? Um with the spears – they also have a darker coloured fur I think maybe this story is representing the Aborigines and the Europeans who came to um Australia – all prim and proper and the Aboriginals – the kangaroos have spears and swinging from trees so that less rule-abiding you could say.</p>	Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language Control
WORD COUNT: 144			
Knowledge of Cognition		Regulation of Cognition	
9.8 Connotative knowledge evident through associations being made between elements i.e. utilising the text to support answer [Declarative].		9.20 Explicit knowledge of textual support prompts implicit representations and vice versa.	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person].		9.33 Goal specification and planning demonstrated through process monitoring, monitoring clarity and accuracy through cognitive pausing, expression of thought, detection of errors, self-correction &/or repetition and the use of modal language to modulate expression and ideas expressed.	
9.18 Strategy knowledge evident through strong regulation of planning, monitoring and control		9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident).	
9.15 Complexity and appropriateness of response and / or drawing on the text to support conclusions demonstrate an understanding, reflection and awareness of the value and transferability of a variety of strategies in various contexts and tasks [Declarative / Strategy].		9.43 Internal verbalisation expressed externally includes personal beliefs	
9.26 Task sensitivity reflected through using the text to answer the question demonstrates knowledge of appropriate and applicable strategies and subsequent strategy application in completing the task [Procedural / Strategy]			
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			
9.31 Context and contextual conditions influence strategy use, transfer and regulation [Conditional / Strategy].			
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	
[4] Similarities[5] Own experiences		Poor Critical Literacy quality answer	

Figure 7.2. DAF: Isla – Picture Book Question 2

Isla’s response to this [?] question (Figure 7.2) shows strong problem solving strategies.

Using the text she initiates deductive reasoning to determine the answer to the question. It is unclear whether she had already determined the analogy of the story before answering this question, but this response is structured as a number of steps, taking evidence from the text and drawing conclusions about the context. She makes subjective comments about the nature of the two species directly connected to the evidence of the text, e.g. the Europeans being ‘all prim and proper’ and the Aborigines with spears and being ‘less rule-abiding’. This response shows Isla’s ability to analyse and synthesise textual evidence within her own experiences and real world understandings. Metacognitively, the response demonstrates connotative and strategy knowledge

and a well-developed task sensitivity that gives her the confidence to take this procedural approach validating her answer, rather than simply giving a direct simplistic response to the question.

Metacognitive Knowledge		POEM Q3: Could this really happen?	Metacognitive Regulation	
KoP KoT	Refers to own capabilities, strengths and weaknesses (Pink)	<i>Response:</i> No! I think it is true that we are polluting too much but I do not think it's very true that it is at all possible for – possible for plastic bags to fly it's kind of impossible. Um but yes, I do get the author's message – um – and yes, we should not pollute.	External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it		Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 53			Self-corrects	
			Repeats a strategy to check accuracy	Control
			Use of modal language	
Knowledge of Cognition		Regulation of Cognition		
9.8 Connotative knowledge evident through associations being made between elements i.e. utilising the text to support answer [Declarative].		9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task.		
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person].		9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.		
9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task].				
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].				
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
[5] Own experiences & [2] Underlying message				

Figure 7.3. DAF: Isla – Poem Question 3

Isla's response in Figure 7.3 reveals her ability to reflect on the literal meaning of the poem, simultaneously situating it within a real-world perspective, and therefore identifying the authorial intent of the text. This is clearly a higher order response compared with that given by many other participants in this study, who tended to approach this question from either a literal or metaphorical perspective. Metacognitively, Isla employs a number of modal words to moderate her meaning and avoid simplistic generalisations. She again demonstrates connotative knowledge being able to create connections between different elements, and reflective utterances as she constructs her reply.

7.2.2.2 Examples of single elements explored and metacognitive behaviours

Seventeen of Isla's twenty-six responses fall into the single critical literacy category, demonstrating a sound level of competency and confidence dealing with these types of questions. Figures 7.4 and 7.5 show a similar critical literacy scoring, yet the metacognitive behaviours score quite differently.

7.2.2.2 Examples of single elements explored and metacognitive behaviours

Seventeen of Isla's twenty-six responses fall into the single critical literacy category, demonstrating a sound level of competency and confidence dealing with these types of questions. Figures 7.4 and 7.5 show a similar critical literacy scoring, yet the metacognitive behaviours score quite differently.

Metacognitive Knowledge		POEM Q4 <i>Does anyone or anything have power and control in this situation?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		
KoT	Completes requirements of task i.e. reads question and answers it		
KoS	Elaborates / draws on text evidence to support		
	Uses metalanguage in answer		
WORD COUNT: 88		<i>Response:</i> Yes, I think that the plastic bags do not have control in this – oh, the plastic bags do have control, sorry, I misspoke. I think the plastic bags have control in this situation – um because, it says in this second – um – the second verse it said “they will form a mighty legion and conquer earth by night, they’d cool the sun, and stifle spring and turn the sea to slush”. So I think, yes, from that little excerpt, I think it’s the plastic bags that do have control.	
Knowledge of Cognition		Regulation of Cognition 9.6 Self-appraisal evident in extended external thinking utterances shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.15 Complexity and appropriateness of response and / or drawing on the text to support conclusions demonstrate an understanding, reflection and awareness of the value and transferability of a variety of strategies in various contexts and tasks [Declarative / Strategy]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task]. 9.26 Task sensitivity reflected through an elaborated answer demonstrates knowledge of appropriate and applicable strategies and subsequent strategy application in completing the task [Procedural / Strategy] 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].	9.20 Explicit knowledge of textual support prompts implicit representations and vice versa. 9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident). 9.33 Goal specification and planning demonstrated through process monitoring, monitoring clarity and accuracy through cognitive pausing, expression of thought, detection of errors, self-correction &/or repetition and the use of modal language to modulate expression and ideas expressed. 9.42 Perception of self-regulation ability is demonstrated by self-correction within the response influenced by internal and external comparisons
Multiple Critical Literacy elements explored		Single Critical Literacy element explored [1] Questions Power	
		Poor Critical Literacy quality answer	

Figure 7.4.DAF: Isla – Poem Question 4

In the above example Isla initiates almost all metacognitive knowledge and regulation strategies included in the discourse analysis frame, and has clearly identified an issue of power within the text. Careful monitoring of her own response picks up an initial error to her summation of which she acknowledges and then continues to answer the question utilising textual support.

Metacognitive Knowledge		SHORT STORY Q10 <i>Is there anyone's point of view missing from the story?</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses (Pink)	<i>Response:</i> Grandma's. Um – and wolf's – because if the wolf had of, it would have made it sound more sympathetic. Whereas Little Red with Little Red's opinion it kind of made it look like the wolf was evil.	External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it		Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 36			Self-corrects	Control
Knowledge of Cognition 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task]. 9.8 Connotative knowledge evident through associations being made between elements i.e. utilising the text to support answer [Declarative]. 9.15 Complexity and appropriateness of response and / or drawing on the text to support conclusions demonstrate an understanding, reflection and awareness of the value and transferability of a variety of strategies in various contexts and tasks [Declarative / Strategy].		Regulation of Cognition 9.33 Evidence of pauses reflective of cognitive processing before or during the response indicates goal specification reflecting planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task.		
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	
		[3] Absences / gaps		

Figure 7.5. DAF: Isla – Short Story Question 10

In this example (Figure 7.5) Isla again clearly identifies and interacts with the critical literacy element of the question; however, in contrast to the example in Figure 7.4, only a single metacognitive knowledge and three metacognitive regulatory strategies are observed. What is also significant with this response is the identification of character point of view and how this links to the purpose of the text. She notes that if the wolf's view had been included it would have changed the nature of the text and the audience's understanding or view of the wolf. She has identified that by telling the story through Little Red's eyes, the wolf maintains an 'evil' perspective in the story. No other participants in this study presented this type of domain knowledge in their responses.

7.2.2.3 Examples of poor responses and metacognitive behaviours

Isla missed one question across the three sessions, and it is assumed this was a case of unintentional skipping question 9 in the poetry section, as she exhibits a willingness to attempt all other questions completed in this study. Of the twenty-six answers selected for analysis, Isla scored only one *poor quality critical literacy response* (see Figure 7.6) according to the criteria established by this study.

Metacognitive Knowledge		SHORT STORY Q16: Do you think the author had a message for the readers in telling this story? If so, what do you think it is?	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses (Pink)	<i>Response:</i> Um – I think there isn't really a message in this –I think – no – I don't think there's a message in this. I think it's just for pleasure.	External utterance suggest inner thinking before answering fully Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Use of modal language	Planning Monitor Control
KoT	Completes requirements of task i.e. reads question and answers it			
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer			
WORD COUNT: 27				
Knowledge of Cognition			Regulation of Cognition	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of repetition strategies to moderate understanding of task requirements.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
			Opinion offered without justification	

Figure 7.6. DAF: Isla – Short Story Question 16

In this response we see a significant level of thinking and reflection evident in the language choices. Metacognitively, there are a number of external utterances and cognitive pausing, in comparison with Isla's other response patterns, that suggests strong reflection and some difficulty finding a satisfactory response in her own mind. Domain-specific strategies such as reiterating the question and understanding the pleasure aspect of fictional texts are also evident in this response. From a scoring perspective she has offered the opinion of the text being created for pleasure rather than containing a message; however, without a justification element to this answer, it could not be scored as a successful response.

7.2.3 Metacognition Profile

Isla worked confidently and competently throughout the three sessions presenting well-structured and effective responses to questions based on McDaniel's five critical literacy elements. Throughout the course of twenty-six responses analysed in this study, Isla demonstrated every strategy adapted from Tarricone's (2011) metacognitive taxonomy, collated in Table 7.3

Table 7.3

Isla: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition:	Evidence in Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	✓
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	✓
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	✓
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	✓
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	✓
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	✓
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	✓

Adaptation of Tarricone (2001) Taxonomy of Metacognition

*Table 7.4**Isla: Overview of MARSI and MSI Results*

MARSI - ISLA	A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS	
[G] Global Reading Strategies	1	5	2	3	2	13
[P] Problem-Solving Strategies	1	1	1	0	4	7
[S] Support Reading Strategies	3	1	2	1	0	7
MSI Answers Correct:	17	25				

Isla's responses to the MARSI survey, overviewed in Table 7.4 (full results are presented in Appendix G), present a realistic assumption of her reading strategy usage. She identifies as 'never' using strategies, such as *deciding what to read closely and what to ignore; using reference material; stopping from time to time to think about what is begin read; paraphrasing what is read; and going back and forth in the text to find relationships among ideas in it*. It may be that as a highly efficient reader, coupled with the types of reading activities she is required to do in Year 5, these strategies would not be relevant to her needs or experience. This same reasoning is afforded to the strategies she marks as 'occasionally' used, such as *taking notes, reading slowly/carefully to be sure of what is being read; underlining information to help remember it; using headings and fonts to help find key information; checking understanding when coming across information that does not make sense; and trying to guess what the material is about when reading*. It could be assumed that Isla really needs to *read slowly and carefully to understand what is begin read*, unless presented with challenging content, or that there are many instances when she needs to *guess what the material is about when she is reading*. As with other participants in this study, at this stage of her schooling note taking, circling information, paraphrasing and using headings are skills that have not been required, therefore explaining the 'never' categorisation.

In her MSI survey (Appendix G) Isla obtained 17/25 correct answers. Six of the seven errors were concerned with her misunderstanding strategies she would use before reading rather than during reading. The seventh error Isla ticked stated that she would *recognise new vocabulary*

words rather than *deciding on what is going to happen* in the text. This might be a reasonable response from a highly competent reader who enjoys word play as Isla does.

Jacob: Year 5 – Possible Talented Reader

7.3 Introduction

While Jacob only completed two of the three sessions, he is included as a case study for this current study as he was the only participant in Year 5 in Group 2. Jacob was moved into Group 2 for analysis as his reading results in the PAT-R standardised test were below his February TORCH test results and he had been identified as a talented reader by the principal and his class teacher.

7.3.1 Reading Profile

In February, Jacob scored 96% reading level in the TORCH test, supporting his identification as a talented reader. In November, however, he only scored 86% in the PAT-R test, which put him outside Gagné's (2008) talented reader definition. The mismatching between these two indicators placed Jacob in Group 2 for this study.

In his ERAS survey Jacob recorded positive attitudes to reading both recreationally and at school. The only negative category scored across these two areas was *doing reading workbook pages and worksheets*. His most positive scores were placed on *spending his free time reading; going to a bookshop; learning from a book* and *when it is time for reading class*. In his self-evaluation survey Jacob marked his comprehension skills as good and that he *picks things up quickly* with regards to his ability to learn new skills (see Appendix G).

Jacob's parent questionnaire revealed that he currently '*loves reading*'. Before school, according to his mother Jacob experienced '*lots of read aloud with me and preschool (and) always enjoyed picture books*'. His mother also indicated that she read picture books daily to Jacob during these years and '*just read aloud to enjoy stories, did not teach*'. His mother also

stated, '*[Jacob] was a later starter*' as a reader, although his mother did not indicate at what age he began reading:

J. had trouble with sounds and seemed somewhat dyslexic when he first tried to read, which was odd as he loved books and always strongly participated in language time at preschool. He started to read strongly when he had enough skills to comprehend.

Analysis of the two-filmed sessions completed by Jacob is presented in the next section.

7.3.2 Overview of Critical Literacy and Metacognitive Performance

Table 7.5 collates Jacob's critical literacy responses selected for analysis and observed Knowledge of Cognition (KoC) and Regulation of Cognition (RoC) strategies during these responses.

Table 7.5

Jacob's critical literacy and metacognitive performance overview

Critical Literacy Questions	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Poor Critical Literacy quality answer	KoC	KoR	Word Count
<i>Questions Power</i>	<i>PoemQ4: Does anyone or anything have power and control in this situation?</i>	[1] Questions Power [5] Own experiences		9.8 9.24 9.26 9.28	9.33 9.40	67
	<i>Poem Q5: Who does not have control?</i>		[1] Questions Power	9.19 9.24 9.28	9.33	34
	<i>P.B. Q6 Who has power and control in this story? Why do you think this?</i>		Opinion given with evidence of other options considered	9.10 9.24 9.28	9.33	57
	<i>P.B. Q7 Who does not have power and control in this story? Why do you think this?</i>		Opinion given with evidence of other options considered	9.7 9.8 9.10 9.24	9.33 9.43	89
	<i>S.S. Q7 Who has the power and control in this story? Why do you think this?</i>	Absent				
	<i>S.S. Q 8 Who does not have power and control in this story? Why do you think this?</i>	Absent				
<i>Unspoken message</i>	<i>Poem Q6: Is there a message in this poem?</i>	[2] Underlying message [5] Own experiences		9.7 9.8 9.24 9.28	9.33	32
	<i>Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.</i>	[2] Underlying message [5] Own experiences		9.7 9.8 9.24 9.28	9.33 9.43	55
	<i>P.B. Q12 Why do you think the author wrote this story?</i>		Opinion given with evidence of other options considered	9.24 9.28	9.33	24
	<i>P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?</i>		[5] Own experiences	9.10 9.15 9.24 9.26 9.28	9.33	104
	<i>P.B. Q15 Do you think this story is telling you to take some action In your own life? Explain</i>		[5] Own experiences	9.6 9.7 9.18 9.24 9.28	9.33 9.40 9.42	156
	<i>S.S. Q15 Why do you think the author wrote this story?</i>	Absent				
	<i>S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?</i>	Absent				

<i>Gaps</i>	<i>P.B. Q 8 Is there anybody in the story who should have a say but does not?</i>	[3] Absences / gaps & [5] Own experiences			9.6 9.18 9.24 9.28	9.33 9.40 9.42	89
	<i>S.S. Q10 Is there anyone's point of view missing from the story?</i>	<i>Absent</i>					
<i>Similarities other texts</i>	<i>Poem Q9 Why do you think the author used this title for the poem?</i>		[4] Similarities		9.8 9.19 9.24 9.28	9.33	31
	<i>P.B. Q2 Where do you think this story took place?</i>		Opinion given with evidence of other options considered		9.8 9.10 9.19 9.24 9.28	9.33	75
	<i>P.B. Q3 Have you read, seen or heard about a story like this before? Explain.</i>	[4] Similarities & [5] Own experiences			9.10 9.19 9.24 9.28	9.33	97
	<i>S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?</i>	<i>Absent</i>					
	<i>S.S. Q3 What is different in this story?</i>	<i>Absent</i>					
<i>Own experiences / culture</i>	<i>Poem Q3 Could this really happen?</i>		[5] Own experiences		9.10 9.24 9.28	9.33	35
	<i>Poem Q7 Do you think this is an important message? Explain</i>	[2] Underlying message & [5] Own experiences			9.10 9.24 9.26 9.28	9.33	55
	<i>P.B. Q4 Do you think this could really happen? Why do you think this?</i>		Opinion given with evidence of other options considered		9.10 9.24 9.26 9.28	9.33	54
	<i>P.B. Q10 Who do you think should read this story? Why?</i>		[5] Own experiences		9.10 9.24 9.26 9.28	9.33	88
	<i>P.B. Q11 Is there anyone in the story who needs help? Explain</i>		[5] Own experiences		9.10 9.24 9.26 9.28	9.33	72
	<i>P.B. Q14 Show the camera the most important double page in this book and explain why you think this.</i>		[5] Own experiences		9.10 9.24 9.26 9.28	9.33	104
	<i>S.S. Q11 Is anyone treated unfairly in the story?</i>	<i>Absent</i>					
Total questions answered: 19					1263		Total Av: 66

Table 7.6 below overviews Jacob's responses according to McDaniel's five critical literacy categories, reflecting his ability to successfully engage in both multiple and single elements within his responses.

Table 7.6

Jacob: Overview of Critical Literacy Responses

McDaniel's Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power	4	1	1	2	0	0
[2] Underlying message	5	2	2	1	0	0
[3] Absences / gaps	1	1	0	0	0	0
[4] Similarities other texts	3	1	1	1	0	0
[5] Own experiences	6	1	4	1	0	0
Total	19	6	8	5	0	0

7.3.2.1 Examples of multiple elements explored and metacognitive behaviours

Of Jacob's nineteen responses one third were categorised as exemplifying multiple critical literacy elements. It is noteworthy that, while Jacob understood the metaphor that ran throughout the poem, he did not pick up the British settlement metaphor of the picture book. However, his answers were so rich and detailed, they still scored as 'successful' using this study's criteria.

Below are two examples of Jacob's scoring multiple elements; Figure 7.7 is an example for the poem and Figure 7.8 for the picture book.

Metacognitive Knowledge		POEM Q7: <i>Do you think this is an important message?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses (Pink)	✓	✓ External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing Self- commentates Monitor
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer	✓ ✓	✓ Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy Control Use of modal language
WORD COUNT: 55		<p><i>Response:</i></p> <p>- And I reckon it's a very important message – because if we didn't – um – the whole race, the whole human race – the whole – um – the whole planet would be overrun and it would just be, instead of having nice waters, we'd have black waters, um – dead things everywhere – nothing is very good when it's like that</p>	
Knowledge of Cognition 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.26 Task sensitivity reflected through using the text to answer the question demonstrates knowledge of appropriate and applicable strategies and subsequent strategy application in completing the task [Procedural / Strategy] 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of repetition strategies to moderate or emphasise meaning.	
Multiple Critical Literacy elements explored [2] Underlying message & [5] Own experiences		Single Critical Literacy element Poor Critical Literacy quality answer	

Figure 7.7. DAF: Jacob – Poem Question 7

In this response (Figure 7.7) Jacob not only recognises the underlying message of the poem, but also integrates his understanding of the consequences from a life or real-world perspective and presents his own judgement on such an outcome. His need to clarify his intent is evident in the repetition of ‘the whole’, attaching the meaning to both human and environmental factors. The response integrates a number of external utterances and cognitive pausing indicating a strong level of reflection being employed. There is clear understanding of the demands of the task, and Jacob presents an enthusiastic and confident level of domain-specific knowledge in this response, such as embedding the question within his answer.

Metacognitive Knowledge		PICTURE BOOK Q8: <i>Is there anybody in the story who should have a say but does not?</i>	Metacognitive Regulation
Kop	Refers to own capabilities, strengths and weaknesses .(Pink)	<p><i>Response:</i></p> <p>If there's anyone in the story who should have a say it's probably the rabbits. I've had rabbits, and rabbits aren't actually that bad. They wouldn't pollute the world, but they eat the crops, but that's in their general nature. – Like us humans we're eating the planet, we the ones polluting it, they're not, they're just going around like they do. We eat a lot more um – of crops, not crops, but we eat a lot more of the plants than they do. So – but we also grow them.</p>	<ul style="list-style-type: none"> ✓ External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing ✓ Self- commentates ✓ Detection of error/s during answer ✓ Self-corrects ✓ Repeats a strategy to check accuracy ✓ Use of modal language
KoT	Completes requirements of task i.e. reads question and answers it		Planning
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer		Monitor
WORD COUNT: 89			Control
Knowledge of Cognition 9.6 Self-appraisal evident in extended external thinking utterances shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.18 Strategy knowledge evident through strong regulation of planning, monitoring and control 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.33 Goal specification and planning demonstrated through process monitoring, monitoring clarity and accuracy through cognitive pausing, expression of thought, detection of errors, self-correction &/or repetition and the use of modal language to modulate expression and ideas expressed. 9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident). 9.42 Perception of self-regulation ability is demonstrated by self-correction within the response influenced by internal and external comparisons	
<i>Multiple Critical Literacy elements explored</i> [3] Absences / gaps & [5] Own experiences		<i>Single Critical Literacy element</i> 	<i>Poor Critical Literacy quality answer</i>

Figure 7.8. DAF: Jacob – Picture Book Question 8

While Jacob has missed the metaphor of the picture book with a literal interpretation of the plot (Figure 7.8), his answer reveals an understanding of the critical literacy element of ‘absences and gaps’ imbedding the answer within his ‘own experiences’ and understandings of the world. Jacob demonstrates a strong understanding of the demands of this domain, presenting an

elaborate response, repeating the question within the answer, with deliberate and careful word selection that shows self-reflective behaviours.

7.3.2.2 Examples of single elements explored and metacognitive behaviours

Thirteen of Jacob's nineteen responses fall into the single critical literacy element category.

Eight of this group demonstrate strong answers with clear links to one of the elements, while the other five offer an opinion that is supported with evidence from other options beyond the text.

Figure 7.9 shows and example of one of Jacob's eight stronger answers and Figure 7.10 an example of a supported opinion response.

Metacognitive Knowledge		PICTURE BOOK Q15: <i>Do you think the story is telling you to take some action in your own life? Explain.</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓		
KoT	Completes requirements of task i.e. reads question and answers it	✓		
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer	✓		
WORD COUNT: 156		<i>Response:</i> <i>Um –(exhales with slight frustration) it's telling us to take action in our own life– in a way because they obviously want us to um –I don't know– stop the rabbits, stop the rabbits from doing all this stuff. Um put in more poison. But I disagree. The rabbits are dying down very, very, very slowly, but they're still dying down. I don't really believe the rabbits can take over the world because a lot of them aren't very smart. Like – they won't take over the world because they're not smart enough. But then if they combine with the other rabbits they won't take over the world but if you walk outside your house and see a whole hoard of rabbits with rabies, well, yeah. I agree, but – it won't happen. If we stop the poisons, yes, it'll happen, but – I don't know– I'm not one to judge the reader, er, author's opinion on this – they wrote the book.</i>	✓ External utterance suggest inner thinking before answering fully	Planning
			✓ Cognitive processing evident via pausing Self- commentates	Monitor
			✓ Detection of error/s during answer	
			✓ Self-corrects	Control
			✓ Repeats a strategy to check accuracy	
			✓ Use of modal language	
Knowledge of Cognition		Regulation of Cognition		
9.6 Self-appraisal evident in extended external thinking utterances shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability		9.33 Goal specification and planning demonstrated through process monitoring, monitoring clarity and accuracy through cognitive pausing, expression of thought, detection of errors, self-correction &/or repetition and the use of modal language to modulate expression and ideas expressed.		
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (beliefs about thinking).		9.40 Self-initiates strategies and monitors and controls these to address task demands (self-regulated learner strategies evident).		
9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative].		9.42 Perception of self-regulation ability is demonstrated by self-correction within the response influenced by internal and external comparisons		
9.18 Strategy knowledge evident through strong regulation of planning, monitoring and control				
9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task].				
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].				
Multiple Critical Literacy elements explored	Single Critical Literacy element explored	[5] Own experiences	Poor Critical Literacy quality answer	

Figure 7.9.DAF: Jacob – Picture Book Question 15

Once again, this example shows that while Jacob has not picked up on the metaphor throughout the picture book, the response is rich in detail with clear links between himself, the text, and world understandings. Again, we see a clear understanding of the type of knowledge expected by this domain through his verbalisation of the question, and domain-specific metalanguage i.e. 'reader', 'author' and 'book'. Such a rich response also reflects clear

metacognitive knowledge and regulation behaviours as highlighted in the discourse analysis frame.

Metacognitive Knowledge		PICTURE BOOK Q7: Who does not have power or control in this story? Why do you think this?	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	✓ External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing Monitor
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer	✓	Self- commentates Detection of error/s during answer
WORD COUNT: 89		<i>Response:</i> <i>I think that um –the reader- controls the story because he's the reader. He can change the story to how he wants. He doesn't actually have to read it. No one has to read the book how it's written, they can read it their own way. I don't think we possibly have the power to control the story, it's actually the writer. The writer can make one story, but the readers can make many out of their own thoughts. So –pretty interesting when you think about it like that.</i>	Self-corrects Repeats a strategy to check accuracy Control ✓ Use of modal language
Knowledge of Cognition 9.7 Declarative knowledge evident through observed domain knowledge and cognitive knowledge 9.8 Connotative knowledge evident through associations being made between elements i.e. utilising the text to support answer [Declarative]. 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task].		Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language to moderate meaning and clarity demonstrates an understanding of a required level of accuracy knowledge required for the task. 9.43 Internal verbalisation expressed externally includes personal beliefs	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored Opinion given with evidence of other options considered	Poor Critical Literacy quality answer

Figure 7.10. DAF: Jacob – Picture Book Question 7

This particular response (Figure 7.10) reflects an advanced domain-specific understanding not usually seen in such a young reader, as it is a skill not taught until Stage 4. Here, Jacob has gone beyond the literal interpretation evident in his other picture book answers and beyond the metaphorical interpretation expected of advanced readers. In this response he has recognised a key critical literacy element, that being text bias, authorial intent and reader interpretation. From a critical literacy perspective it is an exceptional answer for an eleven year old. Metacognitively his behaviours are consistent with his other answers with solid evidence of KoC and some RoC behaviours, including careful language selection to moderate his meaning and intent.

7.3.2.3 Examples of poor responses and metacognitive behaviours

Jacob did not score any poor responses.

7.3.3 Metacognition Profile

Table 7.7 overviews the specific metacognitive behaviours across Jacob's nineteen responses, with every nominated category having been observed at least once throughout the three text sessions.

Table 7.7

Jacob: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition	Evidence in Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	✓
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	✓
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	✓
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	✓
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	✓
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	✓
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	✓

Adaptation of Tarricone (2001) Taxonomy of Metacognition

Jacob's self-evaluated MARSI survey summarised in Table 7.8 (see full results in Appendix G) shows that he has a sound understanding of his own reading behaviours. The behaviours marked as 'never' include strategies that would not necessarily be required of a Year 5 student, such as *skimming to identify length and organisation, underlying to remember, using a dictionary, using pictures to assist understanding, and going back and forth in the text to find relationships among ideas*. He also listed that he 'never' *uses clues to help understand what is being read*. While he clearly has little difficulty reading and comprehending texts in this study, it might be that he has misunderstood the meaning of 'clues', as his behaviours contradict this annotation. Almost half of his answers fell in the 'usually' or 'always' columns showing a strong and realistic understanding of successful reading strategies.

Table 7.8

Jacob: Overview of MARSI and MSI Results

MARSI - JACOB	A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS	
[G] Global Reading Strategies	4	4	0	2	3	13
[P] Problem-Solving Strategies	0	1	0	1	5	7
[S] Support Reading Strategies	2	1	2	2	0	7
MSI Answers Correct:	16 25					

In Jacob's MSI survey (Appendix G) he obtained 16/25 correct answers. He scored 7/10 incorrect answers associated with behaviours before reading, yet his responses are reasonable for behaviours expected during reading. The two other errors might also be interpreted as reasonable responses for a Year 5 student. In question 15 his answer choice to While I am reading, it's a good idea to: *list the main characters* may reflect a common class reading activity completed in Australian schools, requiring identification of main characters. When considered with the other two choices of *having someone read the story aloud to me* and *checking to see if guesses are correct*, it is easy to see why he may have considered neither of these options valid. Similarly in question 18 with the options of either *rereading the text* or *seeing if guesses are right or wrong*

his selection might seem a logical assumption, and indicative of the vague nature of some of the options for this survey.

Ronald: Year 6 – Talented Reader

7.4 Introduction

In the final month of Year 6, Ronald presented as a confident and successful student in all subjects at school and in the running for dux of the year for academic achievement. At 12.2 years he completed all three testing sessions and his results are discussed in this section.

7.4.1 Reading Profile

Ronald attained a score of 99% in the February TORCH school-based test and 97% in the November PAT-R test, and placed in Group 1 for this study. In the ERAS survey (see Appendix G) Ronald revealed he was a keen recreational reader, with only one negative mark against *reading instead of playing*. Conversely, his scorings were generally negative when describing his attitudes towards reading at school. While he ‘liked’ *reading at school* and *learning from a book*, all other categories were in the two negative columns. He especially disliked *reading schoolbooks; stories read in reading class; having to read aloud in class; and using a dictionary*.

Ronald’s mother wrote that he did not read until he was six years old and learnt to read as a product of school and Day Care reading activities. His parents read to him ‘*most days*’ before starting school, and still read to him and his siblings at this stage: ‘*Father reads a book or series to the children every few months*’. At the time of this study his mother described Ronald’s reading as ‘*Independent; spontaneous – will read a book when bored without being told; habitual – reads before bed every night*’. The following sections summarise Ronald’s results for this study.

7.4.2 Overview of Critical Literacy and Metacognitive Performance

Table 7.9 collates Ronald’s responses to the critical literacy questions selected for analysis in this study identifying metacognitive behaviours of Knowledge of Cognition (KoC) and Regulation of Cognition (RoC) observed, using Tarricone’s (2011) Taxonomy numeral coding.

Table 7.9

Ronald: Overview of Critical Literacy and Metacognitive Performance

Critical Literacy Questions	<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	<i>KoC</i>	<i>KoR</i>	<i>Word Count</i>
<i>Questions Power</i>	PoemQ4: Does anyone or anything have power and control in this situation?	[1] Questions Power [5] Own experiences		9.8 9.28	9.40 9.19	23
	Poem Q5: Who does not have control?		[1] Questions Power	9.28 9.24	9.33 9.33	26
	P.B. Q6 Who has power and control in this story? Why do you think this?		[1] Questions Power	9.8 9.24 9.26 9.28	9.33 9.43	41
	P.B. Q7 Who does not have power and control in this story? Why do you think this?	[1] Questions Power [5] Own experiences		9.8 9.10 9.24 9.26 9.28	9.33 9.43	32
	S.S. Q7 Who has the power and control in this story? Why do you think this?	[1] Questions Power [5] Own experiences		9.8 9.10 9.24 9.26 9.28	9.33 9.43	61
	S.S. Q8 Who does not have power and control in this story? Why do you think this?		[1] Questions Power	9.28	9.33	10
<i>Unspoken message</i>	Poem Q6: Is there a message in this poem?		[2] Underlying message	9.8 9.28	9.33	25
	Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.		[2] Underlying message	9.18 9.28	9.33	54
	P.B. Q12 Why do you think the author wrote this story?	[2] Underlying message 5] Own experiences		9.28	9.33	21
	P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?	[2] Underlying message 5] Own experiences		9.15 9.28	9.33	49
	P.B. Q15 Do you think this story is telling you to take some action In your own life? Explain		[2] Underlying message	9.6 9.7 9.10 9.24 9.28	9.33	28
	S.S. Q15 Why do you think the author wrote this story?		[2] Underlying message	9.19 9.24 9.28	-	8
<i>Gaps</i>	S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?		[2] Underlying message	9.6 9.24 9.28	9.33	39
	P.B. Q8 Is there anybody in the story who should have a say but does not?	[3] Absences / gaps [5] Own experiences		9.8 9.28	9.33	19
<i>Similarities other texts</i>	S.S. Q10 Is there anyone's point of view missing from the story?		[3] Absences / gaps	9.24 9.28	9.33	18
	Poem Q9 Why do you think the author used this title for the poem?		Opinion given with evidence of other options considered	9.6 9.10 9.14 9.24 9.28	9.33	22
	P.B. Q2 Where do you think this story took place?		[4] Similarities	9.8 9.10 9.18	9.33	10
	P.B. Q3 Have you read, seen or heard about a story like this before? Explain.	[4] Similarities [5] Own experiences		9.8 9.28	9.33	16
	S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?		[4] Similarities	9.28	9.33	8
	S.S. Q3 What is different in this story?		[4] Similarities	9.28	-	15
<i>Own experiences / culture</i>	Poem Q3 Could this really happen?		[5] Own experiences	9.8 9.28	9.33	37
	Poem Q7 Do you think this is an important message? Explain		[5] Own experiences	9.6 9.8 9.28	9.33	30
	P.B. Q4 Do you think this could really happen? Why do you think this?		[5] Own experiences	9.8 9.28	9.33	36
	P.B. Q10 Who do you think should read this story? Why?		[5] Own experiences	9.8 9.26 9.28	9.33	23
	P.B. Q11 Is there anyone in the story who needs help? Explain	Missed				
	P.B. Q14 Show the camera the most important double page in this book and explain why you think this.		[5] Own experiences	9.26 9.28	9.33	35
Total questions answered: 26		7	19		711	Total Av: 27

Table 7.10

Ronald: Overview of Critical Literacy Responses

McDaniel's Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power	6	3	3	0	0	0
[2] Underlying message	7	2	5	0	0	0
[3] Absences / gaps	2	1	1	0	0	0
[4] Similarities other texts	5	1	3	1	0	0
[5] Own experiences	6	0	6	0	0	0
Total	26	7	18	1	0	0

Table 7.10 overviews Ronald's responses using McDaniel's five critical literacy elements.

Ronald demonstrates a high level of understanding of the requirements of literacy tasks and has no difficulty giving thoughtful and articulate answers that are fully justified with in-text references or real world examples.

7.4.2.1 Examples of multiple elements explored and metacognitive behaviours

Of the twenty-six responses in this sample, Ronald provided seven that engaged multiple critical literacy elements. In each of these he made strong links with his own cultural understandings and personal experiences, demonstrating an acute understanding of the underlying issues presented in each text.

Metacognitive Knowledge		PICTURE BOOK Q13: What do you think is the author's opinion about this situation this story tells us about?		Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	<i>Response:</i> I'd say that he thinks it's quite drastic – I think he holds the side of the Aborigines um – its er a horrible thing these guys have done. I think that the author is just – trying to tell everyone else the horrible things that have happened, so we never forget.	✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓		✓ Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support Uses metalanguage in answer	✓		Self- commentates Detection of error/s during answer	Control
WORD COUNT: 49				Self-corrects Repeats a strategy to check accuracy Use of modal language	
Knowledge of Cognition 9.15 Complexity and appropriateness of response and / or drawing on the text to support conclusions demonstrate an understanding, reflection and awareness of the value and transferability of a variety of strategies in various contexts and tasks [Declarative / Strategy]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task.			
Multiple Critical Literacy elements explored [2] Underlying message & [5] Own experiences		Single Critical Literacy element explored		Poor Critical Literacy quality answer	

Figure 7.11. DAF: Ronald – Picture Book Question 13

While Figure 7.11 shows a strong answer from a critical literacy perspective, metacognitively the behaviours observed from this checklist are limited, at least when compared to similarly strong answers from other participants in this study. He clearly understands the requirements of the task and shows some regulation of cognition through some external utterances and pausing. The language employed, however, is subjective reflecting a strong opinion about the situation being represented in the text, and interconnecting links between authorial purpose, audience and real world issues.

Metacognitive Knowledge		SHORT STORY Q7 <i>Who has the power or control in this story? Why do you think this?</i>	Metacognitive Regulation
KdP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	<ul style="list-style-type: none"> ✓ External utterance suggest inner thinking before answering fully
KoT	Completes requirements of task i.e. reads question and answers it	✓	<ul style="list-style-type: none"> ✓ Cognitive processing evident via pausing
KsS	Elaborates / draws on text evidence to support Uses metalanguage in answer	✓	<ul style="list-style-type: none"> ✓ Self- commentates ✓ Detection of error/s during answer
WORD COUNT: 61			<ul style="list-style-type: none"> Self-corrects Repeats a strategy to check accuracy ✓ Use of modal language
Knowledge of Cognition 9.8 Connotative knowledge evident through associations being made between elements i.e. comparing real-world events and the text to support answer [Declarative]. 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task]. 9.26 Task sensitivity reflected through using the text to answer the question demonstrates knowledge of appropriate and applicable strategies and subsequent strategy application in completing the task [Procedural / Strategy] 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].			Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of self-correction strategies to moderate meaning demonstrates an understanding of a level of accuracy knowledge required for the task. 9.43 Internal verbalisation expressed externally includes personal beliefs
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer
[1] Questions Power & 5] Own experiences			

Figure 7.12. DAF: Ronald – Short Story Question 7

The example in Figure 7.12 reflects more metacognitive behaviours than the previous answer (Figure 7.11). He has justified the wolf's control well through self-selected adjectives of *mischiefous, clever* and *strong* showing a keen understanding of the representation of this character by the author. There is a more frequent use of external utterances and cognitive pausing evidence that he needs to think more carefully with this response, needing to rely on domain-specific knowledge rather than relating real-world understandings, such as in the poem and

picture book texts. However, there is a small connection between the characters of the text and real-world contexts suggested in the quote “just living lives how they should”.

7.4.2.2 Examples of single elements explored and metacognitive behaviours

Eighteen of the twenty-six responses successfully explored a single element of critical literacy. Figures 7.13 and 7.14 show two such examples.

Metacognitive Knowledge		SHORT STORY Q15 <i>Why do you think the author wrote this story?</i>	Metacognitive Regulation		
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)		External utterance suggest inner thinking before answering fully	Planning	
KoT	Completes requirements of task i.e. reads question and answers it	✓	Cognitive processing evident via pausing	Monitoring	
KoS	Elaborates / draws on text evidence to support		Self- commentates		
	Uses metalanguage in answer	✓	Detection of error/s during answer		
WORD COUNT: 8			Self-corrects		
Knowledge of Cognition			Repeats a strategy to check accuracy		
9.19 Implicit, automatic refined strategies / skills due to familiarity of task exhibited by confident and detailed response (without reference to personal capabilities) [Procedural].			Use of modal language		
9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task].					
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].					
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Regulation of Cognition</i>		
		[2] Underlying message			

Figure 7.13. DAF: Ronald – Short Story Question 15

This answer gives an example of how a successful answer to a critical literacy question does not need to be verbose to reflect a higher order response. The quality of the answer lies in the correct use of the literacy meta-word “parody”, more commonly used in Stage 4 and 5 English curriculums rather than Stage 3. Not only is this a succinct and revealing answer, it also reflects no regulatory behaviours listed in the discourse analysis frame. This may be due to Ronald’s level of confidence in answering this question as a result of automatic metacognition.

Metacognitive Knowledge			Poem Q9: <i>Why do you think the author used this title for the poem?</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	<p><i>Response:</i></p> <p>He explained it very well – um – I'm not entirely sure – and it kind of describes the entire thing, especially the second paragraph.</p>	✓ External utterance suggest inner thinking before answering fully ✓ Cognitive processing evident via pausing Self- commentates Detection of error/s during answer Self-corrects Repeats a strategy to check accuracy ✓ Use of modal language	
KoT	Completes requirements of task i.e. reads question and answers it	✓		Planning Monitor Control	
KoS	Elaborates / draws on text evidence to support	✓			
	Uses metalanguage in answer	✓			
WORD COUNT: 22					
Knowledge of Cognition			<p>9.6 Self-appraisal evident in extended external thinking utterances shows involves reflective, static assessment or evaluation of own knowledge, ability, task, context or strategy applicability 9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person]. 9.14 Task knowledge and sensitivity supported by reflection demonstrated through considered pauses and thoughtfulness at the start of response. It acknowledges an awareness of task complexity, learner limitations and cognitive processes, and attempts to facilitate planning to meet task demands [Declarative / Task]. 9.24 Employment of appropriate metalanguage in task response reflects procedural task knowledge specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].</p>	<p>Regulation of Cognition</p> <p>9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task.</p>	
<i>Multiple Critical Literacy elements explored</i>		<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>		
		Opinion given with evidence of other options considered			

Figure 7.14. DAF: Ronald – Poem Question 9

While the answer shown in Figure 7.14 verges on being a ‘poor’ response recognising he is unsure how to respond to the question, Ronald makes a link with the text itself using domain-specific knowledge to highlight the source of the answer. There is more evidence of self-knowledge in this response and some external utterance and pausing that reflects regulatory behaviours.

7.4.4.3 Examples of poor responses and metacognitive behaviours

Ronald did not give any poor responses in this sample.

7.3.6 Metacognitive Behaviours

Table 7.11 shows the metacognitive behaviours evident across Ronald’s three sessions.

Table 7.11

Ronald: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition	Evidence in Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	✓
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	✓
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	✓
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	✓
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	✓
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	✓
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	✓

Adaptation of Tarricone (2001) Taxonomy of Metacognition

Table 7.12

Ronald: Overview of MARSI and MSI Results

MARSI - RONALD	A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS	
[G] Global Reading Strategies	6	6	0	1	0	13
[P] Problem-Solving Strategies	2	0	1	0	4	7
[S] Support Reading Strategies	5	2	0	0	0	7
MSI	21	25				
Answers Correct:						

According to Ronald's MARSI self-evaluation (summarised in Table 7.12) he only performs four of the offered components 'always', including *reading slowly to ensure understanding; trying to stay on task when distracted; paying closer attention to more difficult text; and rereading difficult texts to help with understanding*. He nominated that he 'usually' *previews a text to see what it's about before reading*. All other categories were marked as either 'some', 'occasionally' or 'never' which relying solely on this tool would indicate a poor understanding of the necessary strategies required for successful reading and comprehension. This contradicts the evidence collected in Table 7.11, and the quality of the answers presented across Ronald's twenty-six responses. Ronald's MSI result, however, is in the top range indicating he has a clear understanding of the correct reading strategies necessary for efficient and successful comprehension.

Connor: Year 6 – Typical Reader

7.5 Introduction

Connor was nominated as a typical Year 6 reader and this was confirmed in his results PAT-R test results for this study. At the time of this study Connor was 12.1 years old. He is the eldest of two boys and indicated that he enjoys bike riding and watching car racing.

7.5.1 Reading Profile

It is noted that while Connor's TORCH reading results at the beginning of the year scored in 88%, there had been nearly a 20% drop nine months later in his reading ability, according to

PAT-R results of 66%. Connor indicated in his ERAS survey that he did not find any aspect of reading worthy of the highest level of enjoyment. Recreationally, he scored *starting a new book* and *reading different kinds of books* as ‘enjoyable’. In the academic reading section of the survey all questions scored in the second lowest attitude column, with the exception of *completing reading worksheets and reading tests* that score poorest.

Connor’s mother, a teacher in the senior school, wrote in the parent questionnaire that he was ‘*a confident reader who enjoys reading*’. She indicated that he began reading unassisted at 6 years old, learnt to read through the school home reading program and that he was read to before starting school; however, the frequency is not known. She also stated that she reads ‘*extensively*’; however, his father *finds reading a chore*. Connor completed all three filming sessions, and a discussion of these results is presented in this chapter.

Although Connor’s earlier results suggested that Connor could be a gifted reader, the most recent assessment suggested otherwise, and taking all the assessments used for this study into consideration, Connor only qualified the ‘typical reader’ category.

7.5.2 Overview of Critical Literacy and Metacognitive Performance

Tables 7.13 and 7.14 collate Connor’s achievement in answering the critical literacy questions selected for analysis in this study and the metacognitive behaviours observed.

Table 7.13

Connor: Overview of Critical Literacy and Metacognitive Performance

<i>Critical Literacy Questions</i>	<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>	<i>KoC</i>	<i>KoR</i>	<i>Word Count</i>
<i>Questions Power</i>	<i>PoemQ4: Does anyone or anything have power and control in this situation?</i>	[1] Questions Power		9.24 9.28	9.33	25
	<i>Poem Q5: Who does not have control?</i>	[1] Questions Power		9.6 9.24 9.28	9.33	20
	<i>P..B Q6 Who has power and control in this story? Why do you think this?</i>	[1] Questions Power		9.24 9.28	9.33	16
	<i>P.B. Q7 Who does not have power and control in this story? Why do you think this?</i>	[1] Questions Power		9.24 9.28	9.33	19
	<i>S.S. Q7 Who has the power and control in this story? Why do you think this?</i>	[1] Questions Power		9.24 9.28	9.33	18
	<i>S.S. Q 8 Who does not have power and control in this story? Why do you think this?</i>	[1] Questions Power		9.24 9.28	9.33	42
<i>Unspoken message</i>	<i>Poem Q6: Is there a message in this poem?</i>	[2] Underlying message		9.8 9.24 9.28	9.33	26
	<i>Poem Q10 Do you think the author is trying to make readers think or act about a problem? Explain.</i>	[2] Underlying message		9.8 9.10 9.24 9.28	9.33 9.42	32
	<i>P.B. Q12 Why do you think the author wrote this story?</i>	Clear opinion offered with justification		9.24 9.28	9.33	21

	P.B. Q13 What do you think is the author's opinion about the situation this story tells us about?		Clear opinion offered with justification		9.24 9.28	9.33	26
	P.B. Q15 Do you think this story is telling you to take some action in your own life? Explain		[2] Underlying message		9.24 9.28	9.33	21
	S.S. Q15 Why do you think the author wrote this story?		Opinion given with evidence of other options considered		9.24 9.28	9.33	21
	S.S. Q16 Do you think the author had a message for the readers in telling this story? If so, what do you think it is?		[2] Underlying message		9.6 9.8 9.24 9.28	9.33	22
<i>Gaps</i>	P.B. Q8 Is there anybody in the story who should have a say but does not?		[3] Absences / gaps		9.24 9.28	9.33	21
	S.S. Q10 Is there anyone's point of view missing from the story?		[3] Absences / gaps		9.24 9.28	9.33	29
<i>Similarities other texts</i>	Poem Q9 Why do you think the author used this title for the poem?		Clear opinion offered with justification		9.28	9.33	24
	P.B. Q2 Where do you think this story took place?			Opinion offered without justification	9.28	9.33	13
	P.B. Q3 Have you read, seen or heard about a story like this before? Explain.		Clear opinion offered with justification		9.10 9.24 9.28	9.33	12
	S.S. Q1 Does this story remind you of another story? Do you know the name of the other story?		[4] Similarities		9.24 9.28	9.33	21
	S.S. Q3 What is different in this story?		[4] Similarities		9.6 9.24 9.28	9.33	22
	Poem Q3 Could this really happen?		Clear opinion offered with justification		9.6 9.24 9.28	9.33	25
<i>Own experiences / culture</i>	Poem Q7 Do you think this is an important message? Explain		[5] Own experiences		9.6 9.24 9.28	9.33	27
	P.B. Q4 Do you think this could really happen? Why do you think this?		Clear opinion offered with justification		9.10 9.24 9.28	9.33	23
	P.B. Q10 Who do you think should read this story? Why?		Opinion given with evidence of other options considered		9.24 9.28	9.33	32
	P.B. Q11 Is there anyone in the story who needs help? Explain		Clear opinion offered with justification		9.24 9.28	9.33	24
	P.B. Q14 Show the camera the most important double page in this book and explain why you think this.		Clear opinion offered with justification		9.10 9.24 9.28	9.33	32
	S.S. Q11 Is anyone treated unfairly in the story?		Clear opinion offered with justification		9.28	9.33	22
Total questions answered: 27		0	26	1	636	Total Av: 23.5	

Table 7.14

Connor: Overview of Critical Literacy Responses

McDaniel's Critical Literacy Elements	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
[1] Questions Power	6	0	6	0	0	0
[2] Underlying message	7	0	4	3	0	0
[3] Absences / gaps	2	0	2	0	0	0
[4] Similarities other texts	5	0	2	2	1	0
[5] Own experiences	7	0	1	6	0	0
Total	27	0	15	11	1	0

Table 7.14 provides an overview of Connor's critical literacy performance across his twenty-seven responses. What is evident in this table is the level of consistency and success in

answering these types of questions. While there are no answers that demonstrate multiple critical literacy elements explored, there also were no questions he was unable to answer.

7.5.2.1 Examples of multiple elements explored and metacognitive behaviours

Connor did not present any answers that explored multiple critical literacy elements.

7.5.2.2 Examples of single elements explored and metacognitive behaviours

With the exception of one response, all of Connor's answers reflected single critical literacy elements. Figures 7.15 and 7.16 present two such examples.

Metacognitive Knowledge		POEM Q4 <i>Does anyone or anything have power and control in this situation?</i>	Metacognitive Regulation
KoP	Refers to own capabilities, strengths and weaknesses .(Pink)	✓	✓ External utterance suggest inner thinking before answering fully Planning
KoT	Completes requirements of task i.e. reads question and answers it	✓	✓ Cognitive processing evident via pausing Self- commentates Monitor
KoS	Elaborates / draws on text evidence to support		Self-corrects
	Uses metalanguage in answer	✓	Repeats a strategy to check accuracy Control
WORD COUNT: 25			✓ Use of modal language
Knowledge of Cognition 9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task]. 9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		Regulation of Cognition 9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language to moderate meaning.	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer
		[1] Questions Power	

Figure 7.15. DAF: Connor – Poem Question 4

The response in Figure 7.15 is typical of many of Connor's answers across this study. In many answers he demonstrates a degree of metalanguage using the language of the question within the response, revealing that he understands this to be an expectation of literacy tasks, or domain-specific knowledge. Connor's approach to each question was typically reserved and cautious, beginning sixteen responses with 'well' and six with 'um'. These external utterances show that he employed a consistent reflective strategy as he initiated most answers. Another repeated strategy was a reliance on modal language to temper his answer, reflecting a level of insecurity in his responses rather than a modulation of meaning.

Metacognitive Knowledge		PICTURE BOOK Q11: <i>Is there anyone in the story who needs help? Explain</i>	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses (Pink)		✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it	Response: Yeah, um, the people need a bit of help because – they don't get a say in anything and the rabbits just take over. Yep.	Cognitive processing evident via pausing	Monitor
KoS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 24			Self-corrects	Control
			Repeats a strategy to check accuracy	
			✓ Use of modal language	
Knowledge of Cognition		Regulation of Cognition		
9.24 Employment of appropriate metalanguage (through employing the language of the question in the response) reflects procedural task knowledge understanding specific to a literacy-based task [Procedural / Task].		9.33 Evidence of utterances reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task.		
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Use of modal language to moderate meaning.		
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
		Clear opinion offered with justification		

Figure 7.16. DAF: Connor – Picture Book Question 11

While Connor understood the metaphor in the poem, he did not recognise the allusion in the picture book. However, due to his awareness and knowledge of the demands of the literacy task, almost all of his answers scored as successful from a critical literacy perspective. As demonstrated in Figure 7.16, while he did not make a link between the rabbits of the text and the British settlement of Australia, he still provided a credible answer, drawing on the text to justify his conclusion. Once again, this answer also reflects the employment of limited KoC and RoC strategies.

7.5.2.3 Examples of poor responses and metacognitive behaviours

Metacognitive Knowledge		PICTURE BOOK Q2: <i>Where do you think this story took place?</i>	Metacognitive Regulation	
Top TOP	Refers to own capabilities, strengths and weaknesses (Pink)		✓ External utterance suggest inner thinking before answering fully	Planning
MOT	Completes requirements of task i.e. reads question and answers it	Response: Um – just in some random country – and it's – kind of hard to tell.	✓ Cognitive processing evident via pausing	Monitor
KOS	Elaborates / draws on text evidence to support		Self- commentates	
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 13			Self-corrects	
Knowledge of Cognition		Regulation of Cognition	Repeats a strategy to check accuracy	Control
9.28 Awareness and knowledge of task type, demands and context demonstrated through reading and fully completing the requirements of the task [Conditional / Task].		9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task. 9.33 Use of modal language to moderate meaning.	Use of modal language	
Multiple Critical Literacy elements explored		Single Critical Literacy element explored	Poor Critical Literacy quality answer	
			Opinion offered without justification	

Figure 7.17. DAF: Connor – Picture Book Question 2

Connor only gave one ‘poor’ response in this series as shown in Figure 7.17. This was the only response in which Connor was not able to present a justified answer and therefore his response registered as a ‘poor’ response. This answer repeats the favoured metacognitive strategies employed throughout this study, utilising some cognitive pausing and utterances, and completing the requirements of the task.

Throughout the three sessions Connor provided a consistent pattern of strategies and responses that reflected a number of possible issues for him. He demonstrated a clear understanding of the requirements of the task and domain-specific knowledge, such as including the question within the answer. He had a good understanding of the concepts being treated in each text and saw levels of meaning within each. While he missed the metaphor in the picture book, he was still able to elicit meaning. For example, to the question ‘do you think the story (picture book) is telling you to take some action in your own life?’ Connor’s response: *Um, - well, it's kind of telling you not to let other people take over your life and just – step up.* In the same question presented in the short story series, again Connor answers: *Well, kinda had a message cause he's saying like step up and don't just kinda back down to people, yeah that's it.* The

similarity of the responses for two different texts on two different days may indicate a personal issue he is relating to, or that he understands that stories are laden with meaning for the reader.

7.5.6 Metacognition Profile

While this study only identified about half of the KoC and RoC strategies from Tarricone's taxonomy within Connor's answers, it did show that even this was enough for him to problem-solve the answers successfully. Table 7.15 displays the metacognitive behaviours observed across Connor's analysed answers.

Table 7.15

Connor: Overview of Observed Metacognitive Behaviours

Knowledge of Cognition	Evidence in Responses
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)	-
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	-
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	-
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)	-
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓
Regulation of Cognition	
9.20 Explicit knowledge prompts implicit representations and vice versa.	-
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	✓
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	-

Table 7.16

Connor: Overview of MARSI and MSI Results

MARSI	CONNOR	A NEVER	B OCCASS	C SOME	D USUALLY	E ALWAYS			
[G] Global Reading Strategies		1	0	5	5	2	13		
[P] Problem-Solving Strategies		0	1	1	3	2	7		
[S] Support Reading Strategies		1	2	2	0	2	7		
MSI	Answers Correct:	21	25						

Table 7.16 overviews Connor's MARSI self survey results. As with the other Stage 3 participants in these case studies, he has identified *note-taking* and *underlining information* as 'never' being used. The overall results show that Connor has a good grasp on the strategies he uses and the frequency with which he uses these. The results in the MARSI survey revealed a realistic understanding of his reading behaviours and strategies. An unexpected finding was the high MSI score achieved by Connor that appears commensurate with other talented readers in Year 6 in this study. This would indicate that Connor, even as a *typical reader*, also has a very good understanding of the reading strategies required of successful readers. This will be discussed further in the next chapter.

This chapter presented the Stage 3 case study results for Isla, Ronald, Jacob and Connor. The chapter began with a justification of the selection process for inclusion of each participant as a case study for this study. A reading profile was established based on standardised reading results and parental interviews. A table was presented that overviewed each participant's performance in aspects of critical literacy and metacognitive behaviours. Examples of multiple, single and poor metacognitive responses were presented and justified. An overview of the metacognitive behaviours observed were presented in table form and discussed for each participant and then compared with the results of MARSI and MSI surveys where appropriate.

CHAPTER EIGHT: FINDINGS

8.1 Introduction

This chapter will present the findings of this study. This will include comparing critical literacy results between typical and talented readers; examining metacognitive behaviours during critical literacy activities; comparing observed metacognitive behaviours with self-reporting surveys; and comparing language usage between talented and typical readers.

8.2 Critical Literacy Results

Participants reviewed across the eleven case studies in Chapters 5, 6 and 7 all achieved critical literacy results congruent with their age and reading abilities as overviewed in Table 8.1. This table collates the critical literacy answers across curriculum Stages. These results reflect how increased exposure to literacy practices over time increases understandings, such as knowing how to deal with textual subtleties and the expectations of literacy questions. For example, Stage 1 scored more *unable to answer* responses than Stage 2; and Stage 3 scored nil in this category. This table also shows that within this small sample, the Stage 1 and 2 typical readers performed less successfully in their critical literacy responses than the talented readers. This will be explored further in the next section.

Table 8.1

Stage overview of case study participants' critical literacy results

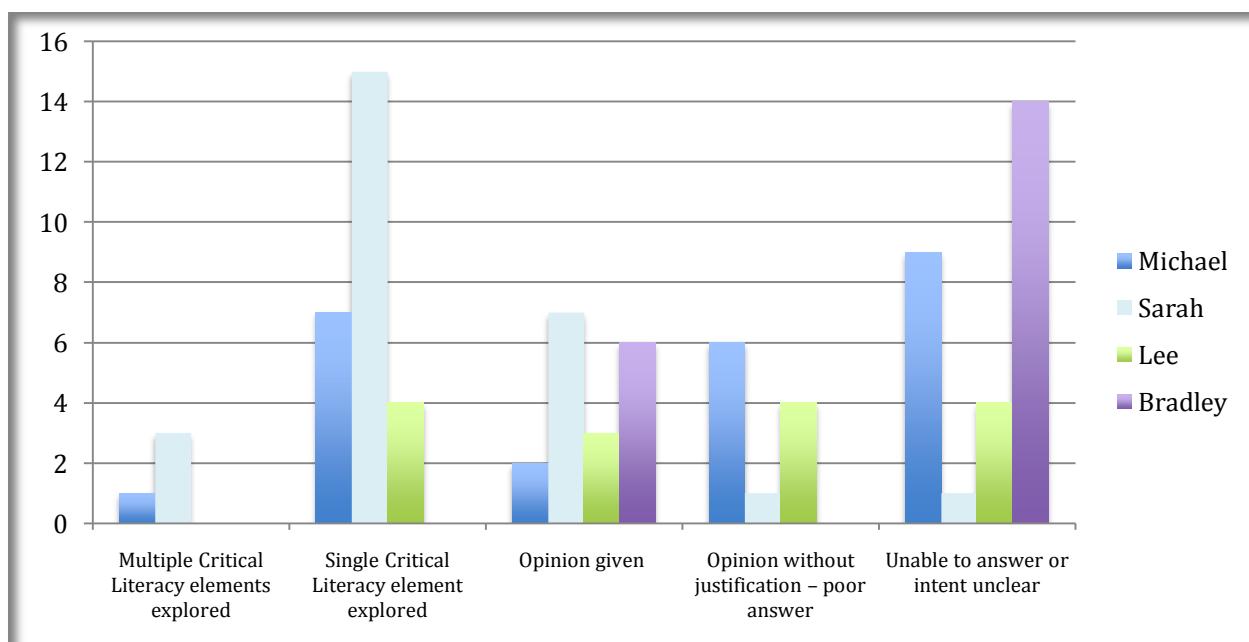
		GROUP	Year	Total answers given	Multiple Critical Literacy elements explored	Single Critical Literacy element explored	Opinion given with justification	Opinion without justification – poor answer	Unable to answer or intent unclear
Stage 1	Michael: 7.5 yrs	1	1	25	1	7	2	6	9
	Sarah: 8.3 yrs	1	2	27	3	15	7	1	1
	Lee: 7.11 yrs	2	2	15	0	4	3	4	4
	Bradley: 8.2 yrs	3	2	20	0	0	6	0	14
Stage 2	Sian: 9.6 yrs	1	3	27	0	19	5	1	2
	Allan: 9.5 yrs	2	3	27	3	14	7	0	3
	Leila: 9.4 yrs	3	4	15	0	4	3	4	4
Stage 3	Isla: 10.2 yrs	1	5	26	7	17	1	1	0
	Jacob: 11.8 yrs	2	5	19	6	8	5	0	0
	Ronald: 12.2 yrs	1	6	26	7	18	1	0	0
	Connor: 12.1 yrs	3	6	27	0	15	11	1	0

Group 1 = talented readers; Group 2 = possible talented reader; Group 3 = typical readers

8.2.1 Critical Literacy Ability Talented Versus Typical Readers

Figure 8.1 presents a visual representation comparing the Stage 1 critical literacy results

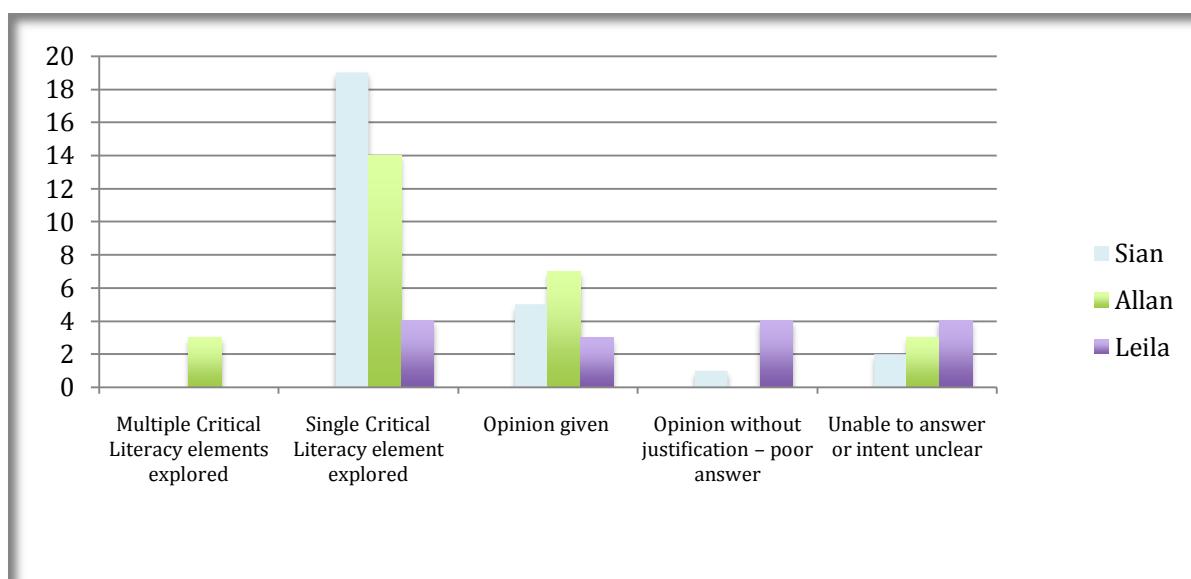
across the 87 responses analysed for these four participants.



Blue = talented reader/s; green = possible talented reader; purple = typical reader.

Figure 8.1 Comparison of Stage 1 Critical Literacy Answers

The two Group 1 *talented readers*, Michael and Sarah, were the only Stage 1 participants who gave a small number of responses that explored ‘multiple critical literacy elements’ in their answers. Of the 26 answers scored in the next highest category, that being ‘exploring a single critical literacy element’, once again Michael and Sarah scored well with Lee, the Stage 1 Group 2 *possible talented reader*. The lowest category for a successful critical literacy response was achieved by all four participants, indicating that these Stage 1 readers were able to give justified opinions to critical literacy questions. Overall, the Stage 1 participants scored a total of 28 answers in the ‘unable to answer’ category. Bradley the *typical reader* of the Stage 1 group scored highest in this section with Michael the youngest participant of the eleven case studies, also having difficulty answering many of the critical literacy questions put to him.

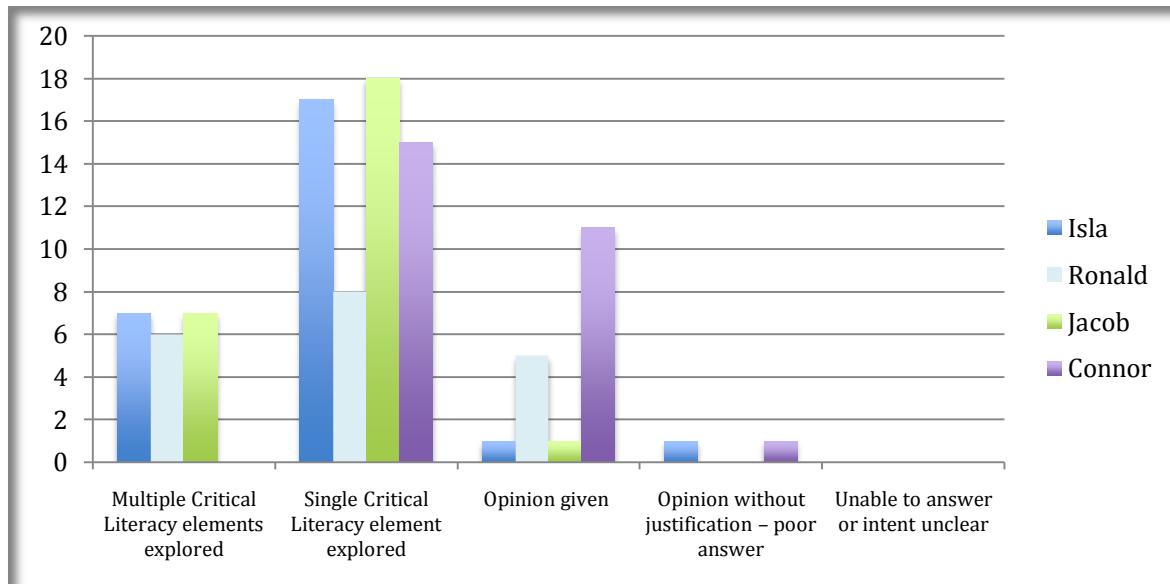


Blue = *talented reader/s*; green = *possible talented reader*; purple = *typical reader*.

Figure 8.2 Comparison of Stage 2 Critical Literacy Answers

Figure 8.2 overviews the 30 responses from the three Stage 2 case study participants. In this sample, it is the Group 2 *possible talented reader* Allan who gave responses that explored ‘multiple critical literacy elements’. Sian, the *talented reader* in this group scored consistently across her answers in the ‘single critical literacy category’. Leila, the *typical reader* showed fairly consistent results across all accepted answer categories. These Stage 2 participants have presented more consistently positive results in answering the critical literacy questions than the

Stage 1 case studies. There is still a sprinkling of ‘poor’ responses by all three Stage 2 participants.



Blue = *talented reader/s*; green = *possible talented reader*; purple = *typical reader*.

Figure 8.3 Comparison of Stage 3 Critical Literacy Answers.

Figure 8.3 presents the Stage 3 participants as achieving the most success in answering the critical literacy questions in this study. Of their 98 responses, 20 answers scored in the highest ‘multiple elements’ column. Both the *talented* and the *possibly talented readers* scored in this highest section. While Connor, the *typical reader*, did not score in the ‘multiple elements’ section, he did score well across the next two categories giving only one ‘poor’ answer by not justifying his opinion. None of the Stage 3 participants were ‘unable to answer’ any of the critical literacy questions.

8.2.2 Domain-Specific Knowledge and Understanding

These results suggest that domain-specific knowledge and understanding contribute to successful engagement in critical literacy questions. For example, participants familiar with the conventions of answering a question fully and drawing on evidence to support answers achieved successful scores in this study. This was evident in both *talented* and *typical* Stage 3 participants, and in all younger *talented readers* to varying degrees.

Domain-specific literacy knowledge such as presenting evidence from the text or real-world knowledge to support an answer was more evident amongst the *talented* and *possible talented readers* across all Stage levels, than the younger *typical readers*. Connor, the Stage 3 *typical reader*, also presented this type of evidence in his answers. This would suggest that both typical and talented older readers understand the need to support answers with evidence, more so than younger typical readers. This strategy is also a valuable skill for successful engagement with critical literacy questions.

Another example of domain-specific literacy knowledge evident in this study was the awareness of how textual features can relay multiple levels of meaning in a text. Participants who were able to go beyond the literal representations of the texts scored more ‘accepted’ answers than those who could not. For example, the texts used in this study required recognition of personification in the poem, metaphor in the picture book and parody in the short story to enable higher order thinking and connections with multiple levels of meaning to be made.

An overview of how domain-specific literacy understanding enables successful responses to critical literacy questions is presented in Table 8.2. Here the collated answers for all 29 participants to the question ‘Do you think there is a message in this text?’ across the three texts, are presented. The colour coding for each answer reflects the quality of the response (see Key at the top of the table) and whether each participant was able to interpret the language feature and underlying message of the text, or draw on textual or real-world knowledge to justify an opinion.

Table 8.2

*Ability to identify textual features and underlying message of the text in answering the question
'Do you think there is a message in this text?'*

KEY	Unable to answer the question		
	Interprets the text literally not aware of the language feature		
	Interprets the language feature (<i>personification, metaphor or parody</i>) as a representation of reality		
	POEM	PICTURE BOOK	SHORT STORY
Michael G1	I'm not sure but – I'm not sure if this could happen or not – cause – um – pollution is getting pretty bad because of all the cars and people throwing cigarettes and paper bags everywhere, rubbish everywhere – but – I'm not sure if it could happen.	No I haven't. Think I've actually seen books like this before – um – ok?	No – I don't think the author had any message in this – ah – story.
Steven G1	ABSENT	No, I haven't.	Did not answer question
	POEM	PICTURE BOOK	SHORT STORY
Noah G1	I think it could happen because I mean this poem is true because like plastic bags are becoming a real problem and it could lead to really bad things like this.	Well, sort of – except not exactly because like, I've heard that that, I've learnt about stuff like – for example, in history this is a bit like – all the rabbits is a bit like, a bit like English people that migrated to Australia cause first there were, well first there were the Aboriginals which like them (<i>points to book</i>) are like them are the many grandparents ago. Then comes the rabbits and they take over well that was like all the people and then bringing all the stuff and everything and all those rabbits bringing all the stuff and everything – that's like all the people from the other countries, bringing in their animals, and, and stuff like that.	There could be and if there was there'd probably be something like don't go out in the woods or somewhere like that by yourself, you should be under care because there could be some bad person lurking around.
Lee G2	This could really happen, plastic bags really do exist at checkouts and every place that this poem has said.	No I haven't seen or heard it – I haven't even – I didn't even know the book existed.	I don't reckon it really has a meaning but just also to be nice
Bradley G3	ABSENT	I haven't heard – I haven't ... book, well have seen the book, but I haven't read it. ... or ... it.	No
Heather G1	It could – it could if we're not careful and leave our plastic bags around everywhere.	I think I have. I think it was the story I read in the library that it was like this, except it wasn't about rabbits it was about the Aboriginals and the English and that – I think – it sort – I think it's sort of based on that the book is sort of based on the England – English people taking over the Aboriginals and Australia. And I think um that the story that I read about the English taking over Australia sounds a bit like that. – the book called 'The Rabbits' (<i>looks for a moment at the cover</i>)	I think they did – don't ever trust the wolf
Sarah G1	Well – I don't think it could happen – um – because the world isn't really, the world is full of air, but it's not full of plastic bags.	Um, (<i>1 second pause</i>) – um – no I haven't. I haven't read, seen or heard about a story like this. Mmm, no, I don't think that there is – but – um – for 'Little Red' (previous test text) there was – so – there probably is a story that's um almost like this – I guess like 'Little Red' – but I've never read it. This story, or another story that's it.	I think – I think he or she did – um – I think it was, like – um – don't be selfish, - um, don't be like a wolf.

Sian G1	I know that it can definitely happen because this has happened, that the plastic bags, like go to the earth and it's bad for them.	I haven't really heard about this story before or read anything similar. Um, yeah.	Actually, I think the message was probably if you're kind to people, people will be kind to you because Little Red was kind to the wolf so the wolf decided not to eat anyone
Nathan G1	Yes, it can really happen because people just throw plastic bags around they can – if you're near the sea they can go in the sea and catch, go in someone's (holds throat), fish's neck let's say and strangle them and drown or say a turtle could swallow it, they will die – um, and – people just throw everything on the ground, as I said, in all those places, so it can really hurt animals and it's littering as well.	ABSENT	Yes, don't go near wolves.
POEM		PICTURE BOOK	
Ann G1	Yes, because there's heaps of plastic bags	Yes, the First Fleet	The message was to always listen to your parents and um, never talk to strangers – and that's why I think this story was a good story.
Allan G2	Well if no one really care – maybe it will.	I – I don't – I – I don't know a story like this except for the Aboriginals	I think he had a message of trying to tell you that – hmm – I think the message was that um forests are dangerous – there are wolves around the world – and dreadful things like being eaten can happen like being killed and all that
Caleb G1	I believe that it could happen if we keep making plastic bags – if we keep making enough of them it could actually suffocate the world and it would die. That's why I think it is actually true.	ABSENT	I think there is actually – I think the author did put a message in this – um – it was, not to um – trust what your elders say and um always think things through better.
Alana G2	ABSENT	No.	Um, well it's a hard one. Um, no I don't think so, Well it might be but I don't know
Leila G3	Yes, because, um –because- I'm not really sure	ABSENT	Not sure
Bob G1	No! Honestly, plastic bags conquering the world, no way. Explain why I think this? Now that is just silly. Why? Because there aren't enough plastic bags, well at least that's what I think – and there's not enough plastic bags and too many people.	ABSENT	ABSENT
Isla G1	No! I think it is true that we are polluting too much but I do not think it's very true that it is at all possible for – possible for plastic bags to fly it's kind of impossible. Um but yes, I do get the author's message – um – and yes, we should not pollute.	Um (<i>picks up book again and looks at front cover</i>) I've heard um like – I said earlier, the story of like how the um – lighter coloured – like the Europeans came to Australia and took the land away from the Aborigines and another story which is similar in my opinion is Pocahontas um – the um light skinned people basically come in and try to take the land away from Pocahontas and her people um so it's a bit similar you could say, except the rabbits are doing it to the kangaroos.	Um – I think there isn't really a message in this – I think – no – I don't think there's a message in this. I think it's just for pleasure. Understands one purpose of texts – to entertain.
Cooper G1	Well, I think it might happen because the way plastic – things are going, plastic bags might get, there might be a lot of plastic bags in a few years, and they might destroy the food chain.	Yes, I have heard about a story like this before. It is like the Stolen Generation of Aboriginals which were taken from their families and westernized.	The – um – I don't think there is that much of a message in this story. I think it is written purely to entertain.

Lucas G1	It could happen but they wouldn't "form a might legion". It might happen by accident but they wouldn't actually ... inaudible	Ah, I don't think I have because I don't really read picture books, but I might have forgot about it. But I don't think I have.	Don't eat people, that's one of the messages, and, um, .. um, ..um, if you want something don't just take it and then want another thing because eventually you'll keep wanting more and more so _ yeah and eventually it will come back, and, just, yeah
Lyn G2	Um I think I think – it – maybe could happen cause plastic bags ... are being used by people everywhere and they're really popular and they help.	Um – no I haven't read, or seen or heard a story like this before – um I like it, it's been good.	Um, I think that the author had a message that you can do anything if you try like Little Red did, he got the wolf to stop eating people so yeah
	POEM	PICTURE BOOK	SHORT STORY
Jacob G2	Could this really happen? Yes. If we don't cut down on our use of plastic bags and – yes, it could happen. Which is why people are making the portable – green bag things – I don't know	Um – I haven't really read or seen a story like this before – well, actually I have, except they weren't rabbits they were humans – like um – can't remember what the story was called, think it was um – Ah 'Once' and ...(). Um they were really good stories, but they weren't picture books, they actually had no pictures in them. So I've read very few picture books because I like um reading books that amuse me that aren't very long books – that don't have any pictures in them – I like the long books that amuse me a lot though.	ABSENT
Hayley G1	Well, it's probably happening right now so – yeah, it's probably – it could really happen may-be – and – yeah.	ABSENT	I think the author had a message that ..um..that..you should always know the consequence and that ...yeah,...and..
Ava G2	ABSENT	Well, no, not that I can think of.	Did not turn sheet over as instructed.
Lacey G3	ABSENT	ABSENT	I do. I think there is always compromise and treat other people fairly, don't just think of yourself or be selfless not selfish.
Bonnie G2	ABSENT	Yes, it's a lot like the stolen generation story, where the – um – and the Aboriginal story of our culture- where the Aboriginals lived in Australia and then the white colony came and took all their own animals and their food and – they had fights and then stole their children.	Um, well the original message of the original book was a moral about um not going out by yourself and that sort of thing because it was an old fashioned story but in this one I don't think the author really aimed for a message I think it was supposed to be entertainment
Kylie G1	I don't think this could really happen - you know plastic bags aren't alive; yeah they're everywhere, but they don't have a brain or anything.	Well, no, but you know, it kind of reminded me of us and the Aboriginals.	To be nice and not to um take things for granted and not to just take things. But you've gotta ask and you've gotta be nice to people otherwise they might get angry. And you might end up getting knocked out with an empty basket
Connor G3	Well, it could happen, because – like if we kept using plastic bags and kept throwing them out, they could kind of take over. And – yeah.	Um- no – because like um I don't read these sort of books.	Well, kinda had a message cos he's saying like step up and don't just kinda back down to people, yeah that's it
Ronald G1	Ah, sort of – they will choke us ... if we don't get rid of them – ah – there's kind of too many plastic bags in the world at the moment – that's why they're switching to those other bags.	Yep – it's when um – the English colonists – um – when they took over Australia from the Aborigines	Aah - If there was a message the message would be kinda like um don't stray from, don't stray from what you're told as a kid, like kind of yeah stay on the right path, don't stray kind of thing

Simon G1	Nah –this couldn't really happen because, um, plastic bags aren't living, they haven't got a brain and they're not alive so they couldn't work together in any way.	Um – I think I have – it – hum – well, it might be like humans coming in invading Australia, the pictures kind of imply that. Or um – it's just rabbits invading Australia someone ar – kept rabbits for hunting and they – um – got loose and bred and bred around Australia.	I think he did put a message in there ..um.. I think it was more um, if you can try and change someone's opinions like Little Red changed the wolf so um yeah just trying to make someone a bad person into a good person basically.
Audrey G1	ABSENT	Yes, um it's like the story – of the English coming – to the Aboriginals – um – and taking over their land and beating them.	I think the message was listen to instructions and don't do stuff you were told not to do because then none of it would have happened

Table 8.2 above shows that the older *talented readers* and most *possible talented readers* recognised the underlying layers of meaning, more easily than the *typical readers*. One explanation for this is likely to relate to the age and literacy experience of participants. For example, the two youngest *talented readers*, Michael and Steven, were unable to answer two of these questions; however, when Michael drew on his understandings of real-world experiences he was successful in his attempt.

8.3 Metacognitive Behaviours Results

This section will focus analysis on the metacognitive behaviours of the eleven case studies presented in Chapters 5, 6 and 7. Table 8.2 overviews the collated results of these eleven case studies focusing on the sixteen selected metacognitive assertions taken from Tarricone's metacognitive taxonomy (2011) as described in Chapter 3.

Table 8.3 identifies disparity between the number of observed metacognitive behaviours used by *talented* and *possibly talented* participants compared with those observed in the *typical readers* in this study. As the data collected only focused on identifying behaviours, rather than the frequency of the behaviours, Table 8.3 gives an indication of which metacognitive skills have been viewed as having been used at least once during the sessions completed. Therefore, this table collates a range of metacognitive strategies exhibited by each participant.

Table 8.3

Overview of Metacognitive Behaviour Profiles Using 16 of Tarricone's Metacognitive Assertions

	Group 1					Group 2			Group 3		
	Michael 7 yrs	Sarah 8 yrs	Sian 9 yrs	Isha 10 yrs	Ronald 12	Lee 7 yrs	Allan 9 yrs	Jacob 11 yrs	Bradley 8 yrs	Leila 9 yrs	Connor 12 yrs
Knowledge of Cognition											
9.6 Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability	✓	✓	✓	✓	✓	✓	✓	✓	-	-	✓
9.7 Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner) (HOA.28)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects (HOA. 29)	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓
9.10 Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts (HOA. 31)	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓
9.14 Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.	✓	✓	✓	✓	--	✓	✓	✓	-	-	-
9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving	-	✓	✓	✓	-	✓	✓	✓	-	-	-
9.18 Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)		✓	✓	✓	✓	✓	✓	✓	-	-	-
9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]	✓	✓	✓	✓	✓	✓	✓	✓	-	-	✓
9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓	✓	✓	✓	✓	✓	✓	✓	-	-	✓
9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regulation of Cognition											
9.20 Explicit knowledge prompts implicit representations and vice versa.	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-
9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)	✓	✓	✓	✓	✓	✓	✓	✓	-	-	✓
9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs	-	✓		✓	✓	✓	✓	✓	-	-	✓
9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation	✓	✓	✓	✓	✓	✓	✓	✓	-	-	✓

Automaticity, or automatic metacognitive strategies (Samuels, Ediger, Willcutt & Palumbo, 2005) impacted on the observation process of identifying metacognition in some participants. For example, in Ronald's response to the Short Story question 15 'Why do you think the author wrote

this story?' his confident reply '*As a parody of Little Red Riding Hood*' demonstrated advanced literacy-domain knowledge, yet there were no metacognitive regulation identifiers evident using the DAF tool, such as external utterances suggesting inner thinking, cognitive pausing, self-correction, repetition to clarify meaning or use of modal language. These identifiers proved to be only useful if a participant needed to carefully consider their responses. When participants gave confident replies, regulation of cognition through planning, monitoring and control were not observed in the responses.

The following sections will discuss the observed metacognitive behaviours of each participant using a selection of Tarricone's (2011) metacognitive assertions. The discussion has been organised according to reading ability i.e. Group 1 *talented readers*, Group 2 *possible talented readers* and Group 3 *typical readers*.

8.3.1 Group 1: Talented Readers - Observed Metacognitive Behaviours

8.3.1.1 Michael: Year 1

Across the three sessions Michael's ability to answer questions varied and displayed different levels of confidence in their completion. There were far more external utterances, cognitive pausing and abbreviated answers evident during the poem and short story sessions. The most frequent employment of metacognitive behaviours was viewed during the picture book session. Although Michael did not make a link with the underlying metaphor of the picture book, his reliance on the Knowledge of Cognition (KoC) strategy portrayed in Tarricone's taxonomy as assertion 9.26, using textual evidence to help complete the task, demonstrated a level of task sensitivity, and his developing procedural strategy knowledge. It was also during this session that Michael frequently repeated the question in an attempt to make sense of the requirements of the task, reflecting procedural task knowledge, specifically KoC assertion 9.24 demonstrating his developing understanding of the selection and flexible application of literacy-specific strategies.

Michael appeared to have difficulty answering many of the critical literacy questions in this study; however, his responses showed that he attempted to employ a number of different

metacognitive strategies (see Table 8.4) to help complete the requirements of the tasks. Unlike Bradley, the Year 2 *typical reader*, he did not skip or ignore questions he was unable to answer. He simply stated that he did not know the answer to many of the questions and moved onto the next one. Again, this reflects a strong level of understanding of the task requirements and goals, yet also a level of confidence to continue with the tasks despite not being able to answer every question. Because Michael's response style was generally pragmatic in nature, there were a number of strategies that were not observed in this study. For example, it was not clearly evident that he understood the transferability of different strategies across tasks (KoC assertion 9.15); whether he was able to confidently utilise planning, monitoring and control strategies (KoC assertion 9.18); or to what extent his level of internal and external comparisons and self-competence beliefs existed (RoC assertion 9.42). Michael's metacognition profile showed that he demonstrated four of the possible six higher-order thinking elements identified in Tarricone's selected assertions, revealing Michael evidenced levels of executive control, specifically some self-regulatory systems. His responses and behaviours in this study demonstrate developing strategy selection and usage, and no indication either in the parent questionnaire or discussion with the principal or his teachers that this knowledge is the result of formal training or instruction.

Table 8.4 overviews Michael's metacognitive behaviours observed during this study and reflect that he is developing understandings of his own Knowledge of Cognition; Declarative person and task knowledge; Procedural task and strategy knowledge; Conditional task and strategy knowledge; Regulation of Cognition Knowledge; and some Self-Regulatory behaviours.

Table 8.4

Michael's metacognitive strategies observed across three sessions

KoC	9.06	✓	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different

		contexts
	9.14 Task	✓ Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
Procedural	9.19	✓ Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
	9.20	✓ Explicit knowledge prompts implicit representations and vice versa.
	9.24 Task	✓ Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
	9.26 Strategy	✓ Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
Conditional	9.28 Task	✓ Conditional knowledge supports awareness and knowledge of task type, demands and context
	9.31	✓ Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓ Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
Self Regulation	9.40	✓ Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
	9.43	✓ Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.3.1.2 Sarah: Year 2

Across the three sessions Sarah showed evidence of all of the metacognitive assertions selected for this study. Observing these strategies was enabled through her verbose responses and willingness to discuss her thoughts and considerations at length. Sarah's answers demonstrate confident KoC and RoC strategy knowledge, which allowed her to meet the demands of the tasks. Many of her answers drew on evidence from the text or her own world understandings. This indicates that she has a level of transferability awareness across different contexts, reflective of declarative strategy understanding. Her responses also indicate that she has a confident understanding of the requirements of literacy-based tasks, such as employing the question within the answer, using textual evidence to support answers, and a developing knowledge of different language features used by authors. Although she did not pick up on the metaphor of the picture book, she was sensitive to the plight of the characters and discussed her thoughts and disapproval of the inequality and unfairness presented in this text at length. Sarah's answers also reflected self-understanding of her own capabilities, such as knowing what she knew and what she did not know (KoC assertion 9.10). At just 8 years of age, Sarah demonstrated her ability to initiate the

necessary strategies that allowed her to confidently engage in the complexities of texts, and meet the goals of the task requirements.

Table 8.5 reveals the behaviours observed during Sarah's three sessions and show she has developing understandings of her own Knowledge of Cognition; Declarative person, task and strategy knowledge; Procedural task and strategy knowledge; Conditional task and strategy knowledge; Regulation of Cognition knowledge; and Self-Regulatory behaviours.

Table 8.5

Sarah's metacognitive strategies observed across this study

KoC	9.06	✓	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
	9.14 Task	✓	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
	9.15 Strategy	✓	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
	9.18 Strategy	✓	Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)
	9.19	✓	Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
Procedural	9.20	✓	Explicit knowledge prompts implicit representations and vice versa.
	9.24 Task	✓	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
	9.26 Strategy	✓	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
	9.28 Task	✓	Conditional knowledge supports awareness and knowledge of task type, demands and context
Conditional	9.31	✓	Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
Self Regulation	9.40	✓	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
	9.42	✓	Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs
	9.43	✓	Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.3.1.3 Sian: Year 3

Sian's responses suggest a reserved and focused personal style in answering these types of questions in her employment of all except one of the metacognitive behaviours highlighted for this study. The absence of this strategy, assertion 9.42 *self-regulation ability influenced by internal and external comparisons and self-competence beliefs*, may be as a result of Sian's

reserved personality, avoiding overt opinions in her answers. This is not to say this strategy is not within Sian's arsenal, as rewording the questions may have elicited a different response. In each question she has given a pragmatic answer drawing on evidence directly from the text. This in itself is a clear indication of her literacy-specific knowledge and understandings. In some sessions there are occasional external utterances and cognitive pausing, but not to the same extent as many other participants. This, coupled with the slow and deliberate pacing of her answers, suggests a level of thoughtful consideration. The number of KoC and RoC strategies observed across Sian's three sessions suggests she possesses many metacognitive skills as a Year 3 student.

Table 8.6 displays the behaviours observed of Sian during her session and indicates levels of developing understandings of her own Knowledge of Cognition; Declarative person, task and strategy knowledge; Procedural task and strategy knowledge; Conditional task and strategy knowledge; Regulation of Cognition knowledge; and Self-Regulatory behaviours.

Table 8.6
Sian's metacognitive strategies observed across three sessions

KoC	9.06	✓	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
	9.14 Task	✓	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
	9.15 Strategy	✓	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
	9.18 Strategy	✓	Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)
	9.19	✓	Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
Procedural	9.20	✓	Explicit knowledge prompts implicit representations and vice versa.
	9.24 Task	✓	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
	9.26 Strategy	✓	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
	9.28 Task	✓	Conditional knowledge supports awareness and knowledge of task type, demands and context
Condition al	9.31	✓	Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
Self Regulati	9.40	✓	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
	9.43	✓	Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.3.1.4 Isla: Year 5

Like her sister Sarah, Isla's verbose responses produced rich and complex answers, highlighting each of the metacognitive behaviours selected for analysis for this study. Unlike her sister, however, Isla, with an additional two years of life experiences to draw on, gave an overall stronger performance and had more success answering the critical literacy questions posed. Her answers reflected a stronger reliance on textual evidence, such as quotations and text images to support her responses and revealed an advanced level of task sensitive awareness of literacy-domain knowledge (KoC assertion 9.26). Isla had many more connotative examples demonstrating her confident ability to make associations between elements of the texts and real-world understandings (KoC assertion 9.8). She also gave many examples that reflected self-initiated strategies that assisted her in planning, monitoring and controlling her ability to address task demands, as would be expected from a self-regulated learner (RoC assertion 9.40). Isla displayed a rich reservoir of metacognitive behaviours that enabled her to produce highly successful responses and reflected strong self-regulation and executive processing.

Table 8.7 shows the behaviours identified in Isla's responses during this study and indicate she has developing understandings of her own Knowledge of Cognition; Declarative person, task and strategy knowledge; Procedural task and strategy knowledge; Conditional task and strategy knowledge; Regulation of Cognition knowledge; and Self-Regulatory behaviours.

Table 8.7

Isla's metacognitive knowledge strategies observed across this study

KoC	9.06	✓	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (<u>Beliefs about thinking or propositional manner</u>)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
	9.14 Task	✓	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
	9.15 Strategy	✓	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
	9.18 Strategy	✓	Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)

Procedural	9.19	✓	Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
	9.20	✓	Explicit knowledge prompts implicit representations and vice versa.
	9.24 Task	✓	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
	9.26 Strategy	✓	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
Conditional	9.28 Task	✓	Conditional knowledge supports awareness and knowledge of task type, demands and context
	9.31	✓	Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
Self Regulation	9.40	✓	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
	9.42	✓	Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs
	9.43	✓	Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.3.1.5 Ronald: Year 6

Ronald presented examples of each of the taxonomy assertions selected for this study.

While his answers were not as detailed as Isla's, he portrayed domain-specific knowledge and confident problem solving ability. His answers were generally brief, yet text driven, and reflected self-awareness and his ability to transfer strategies across the three texts. There is also evidence of internalised metacognition as many responses reflected few or none of the regulatory behaviours identified for this study. These RoC behaviours were visible only when Ronald was challenged by a question that required careful consideration.

Table 8.8 reveal's the details of Ronald's metacognitive behaviours during this study indicating he has developing understandings of his own Knowledge of Cognition; Declarative person, task and strategy knowledge; Procedural task and strategy knowledge; Conditional task and strategy knowledge; Regulation of Cognition knowledge; and Self-Regulatory behaviours.

Table 8.8

Ronald's metacognitive knowledge strategies observed across this study

Declarative	9.06	✓	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
	9.14	✓	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity,

	Task	learner limitations and cognitive processes, and facilitates planning to meet task demands.
	9.15 Strategy	✓ Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
	9.18 Strategy	✓ Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)
Procedural	9.19	✓ Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
	9.20	✓ Explicit knowledge prompts implicit representations and vice versa.
	9.24 Task	✓ Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
	9.26 Strategy	✓ Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
Conditional	9.28 Task	✓ Conditional knowledge supports awareness and knowledge of task type, demands and context
	9.31	✓ Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓ Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
Self Regulation	9.40	✓ Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
	9.42	✓ Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs
	9.43	✓ Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.3.2 Group 2: Possible Talented Readers - Observed Metacognitive Behaviours

8.3.2.1 Lee: Year 2

Metacognitively, Lee demonstrated a number of strategies not evident in his age peers' responses in this study. Significantly, there was a lack of external utterances across most of his answers. While there was the occasional use of '*I think*' in his answers, generally these were only used when the question specifically incorporated phrases, such as 'do you think...' in the design. Cognitive pausing, repetition and modal language were evident in many answers; however again, not to the same level exhibited by his peers. With this there is a tone of confidence in Lee's responses, that when compared with this level of success in answering the critical literacy questions, portrays a high level of literacy-domain knowledge. Lee exhibited behaviours reflective of all the metacognitive assertions selected for analysis in this study. This evidence, incorporated with his ability to successfully answer most of the critical literacy questions, supports Lee being considered a *talented reader*.

Table 8.9 below displays Lee's developing understandings of his own Knowledge of Cognition; Declarative person, task and strategy knowledge; Procedural task and strategy

knowledge; Conditional task and strategy knowledge; Regulation of Cognition knowledge; and Self-Regulatory behaviours.

Table 8.9

Lee's metacognitive knowledge strategies observed across this study

KoC	9.06	✓	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
	9.14 Task	✓	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
	9.15 Strategy	✓	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
	9.18 Strategy	✓	Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)
Procedural	9.19	✓	Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
	9.20	✓	Explicit knowledge prompts implicit representations and vice versa.
	9.24 Task	✓	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
	9.26 Strategy	✓	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
Conditional	9.28 Task	✓	Conditional knowledge supports awareness and knowledge of task type, demands and context
	9.31	✓	Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
Self Regulation	9.40	✓	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
	9.42	✓	Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs
	9.43	✓	Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.3.2.2 Allan: Year 3

Allan's responses and behaviours across this study reflected each of the 16 assertions selected for analysis. He confidently utilised reflection, monitoring and self-regulation strategies related to well-developed metacomprehension skills (KoC assertion 9.69). Allan demonstrated connotative knowledge as he drew links and associations between elements of the text and real-world events in many of his answers. Allan's performance in each session improved when he gave more detailed answers. This was evident when comparing his success rate in the final short story session, compared with the results he attained in the first poem session. This improvement

might be explained as the confidence that comes with practice with regards to his understanding of how to complete the tasks.

In Table 8.10 Allan's metacognitive behaviours indicate developing strategies with his Knowledge of Cognition; Declarative person, task and strategy knowledge; Procedural task and strategy knowledge; Conditional task and strategy knowledge; Regulation of Cognition knowledge and Self-Regulatory behaviours. The level of success in answering the critical literacy questions and rich metacognitive behaviours exhibited by Allan across this study suggests that, at this time, he should be considered a *talented reader*.

Table 8.10

Allan's metacognitive knowledge strategies observed across this study

KoC	9.06	✓	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
	9.14 Task	✓	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
	9.15 Strategy	✓	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
	9.18 Strategy	✓	Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)
	9.19	✓	Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
Procedural	9.20	✓	Explicit knowledge prompts implicit representations and vice versa.
	9.24 Task	✓	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
	9.26 Strategy	✓	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
	9.28 Task	✓	Conditional knowledge supports awareness and knowledge of task type, demands and context
Conditional	9.31	✓	Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
Self Regulation	9.40	✓	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
	9.42	✓	Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs
	9.43	✓	Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.3.2.3 Jacob: Year 5

Jacob was observed engaging most metacognitive assertions across all sessions. This was due in part to the depth of his answers and willingness to discuss each question at length, similar to Isla. His style of response was confident with strong connotative skills drawing links between real world events and the texts, reflecting declarative knowledge. The success of his responses and the variety of metacognitive behaviours observed suggest that Jacob should be considered a *talented reader*.

Jacob's behaviours throughout this study demonstrated developing understandings of his own Knowledge of Cognition; Declarative person, task and strategy knowledge; Procedural task and strategy knowledge; Conditional task and strategy knowledge; Regulation of Cognition knowledge; and Self-Regulatory behaviours, as seen in Table 8.11 below.

Table 8.11

Jacob's metacognitive knowledge strategies observed across this study

KoC	9.06	✓	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
	9.14 Task	✓	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
	9.15 Strategy	✓	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
	9.18 Strategy	✓	Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)
Procedural	9.19	✓	Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
	9.20	✓	Explicit knowledge prompts implicit representations and vice versa.
	9.24 Task	✓	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
	9.26 Strategy	✓	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
Conditional	9.28 Task	✓	Conditional knowledge supports awareness and knowledge of task type, demands and context
	9.31	✓	Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
Self Regulation	9.40	✓	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
	9.42	✓	Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs
	9.43	✓	Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.3.3 Group 3: Typical Readers - Observed Metacognitive Behaviours

8.3.3.1 Bradley: Year 2

Bradley's attempts in answering questions across the two sessions were inconsistent and suggested inadequate domain knowledge, ineffective strategies, weak cognitive monitoring, and a lack of understanding the task demands (KoC assertion 9.30). In the picture book session he made no attempt to answer six of the fifteen questions. This behaviour also suggests a lack of motivation and volition across both sessions. Responses were limited with small word counts across his answers. He also utilised avoidance strategies such as whispering and mumbling to himself coupled with distracted behaviours such as examining the camera and staring out the window.

Table 8.12 results show that Bradley was not been able to demonstrate behaviours reflective of an extensive range of assertions. He has, however, shown some ability that reflects developing Knowledge of Cognition, and Conditional task knowledge.

Table 8.12

Bradley's metacognitive strategies observed across this study

KoC			
Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
Conditional	9.28 Task	✓	Conditional knowledge supports awareness and knowledge of task type, demands and context
RoC	9.33	✓	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.

8.3.3.2 Leila: Year 5

Leila had mixed success in answering the questions and engaged RoC planning strategies across all but one answer. Her many pauses suggested extensive cognitive processing during many of her responses. While she also relied heavily on external utterances, unlike the participants in Groups 1 and 2, she was often unsuccessful in finding an answer to complete the goals of the task. There was limited domain knowledge exhibited such as using the question within the answer. Unlike Bradley, however, Leila generally stated when she was unable to

answer a question, and, with one exception, did not ignore or skip questions she could not answer. Her attitude and performance suggested significant self-doubt.

Across the two sessions Leila demonstrated some developing metacognitive behaviours, as shown in Table 8.13 below particularly in Declarative knowledge and Regulation of Cognition Knowledge.

Table 8.13

Leila's metacognitive strategies observed across this study

Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
	9.31 strategy	✓	Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.

8.3.3.3 Connor: Year 6

Of the three *typical readers'* case studies, Connor displayed significantly more domain-specific knowledge than the other Group 3 participants such as utilising literacy meta-language and employing the question within the answer. His level of metacognitive knowledge was much stronger than the younger two *typical readers*, reflective of the skills expected and required of a typical Year 6 student. However, the extensive external utterances, cognitive pausing and his quiet, reserved voice suggested a level of self-doubt and a lack of confidence in his own abilities across most of his answers.

Table 8.14 details the metacognitive assertions evident across the three sessions. These included his developing Knowledge of Cognition; Declarative knowledge; Procedural task and strategy knowledge; Conditional task and strategy knowledge; Regulation of Cognition knowledge and some Self-Regulatory behaviour.

Table 8.14

Connor's observed metacognitive strategies observed across this study

KoC	9.06	✓	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
Declarative	9.07	✓	Declarative knowledge includes two forms: domain (knowledge of reality domains) and cognitive knowledge (Beliefs about thinking or propositional manner)
	9.08	✓	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
	9.10 Person	✓	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
	9.24 Task	✓	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
	9.26 Strategy	✓	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
	9.28 Task	✓	Conditional knowledge supports awareness and knowledge of task type, demands and context
Conditional	9.31	✓	Context and contextual conditions influence strategy use, transfer and regulation
RoC	9.33	✓	Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.
Self Regulation	9.40	✓	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
	9.42	✓	Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs

8.5 MARSI and MSI Tools Versus Observation Method

The previous section overviewed the observed metacognitive behaviours employed by each participant across the eleven case studies. This next section explores the results of the self-survey inventories, which are currently popular in much of the literature, as valid identifiers of metacognition and metacomprehension strategies. The Metacomprehension Strategy Index (MSI) was only administered to Stage 3 participants due to time restrictions and stress evidenced in some of the younger participants who completed this survey in the Pilot Study. The modified Metacognitive Awareness of Reading Strategies Inventory (MARI) was given to all participants. For comparison purposes, focus is only directed at the two outer columns, that is, at strategies 'never' used and strategies 'always' used. Once again, in the following sections each of the eleven case studies will be individually discussed.

8.5.1 Group 1: Talented Readers - Metacognition Self-Report Surveys Compared With Observed Behaviours

8.5.1.1 Michael: Year 1

Comparing Michael's self-reporting inventory (Marsi) results in Table 8.15 with the behaviours observed during the three sessions for this study in Table 8.4, it appears that he believes he utilises far fewer strategies than his behaviours suggest. While the wording in each tool makes direct comparisons challenging, some consensus and anomalies can still be drawn. For example, in the observed sessions Michael did not demonstrate strong regulation of planning, monitoring and control (assertion 9.18), or the transferability of different strategies in various contexts (assertion 9.15). To some extent this supports his claim that he does not use some global reading strategies, such as prediction, confirmation, monitoring text content with reading purpose, or reading texts closely. An explanation for this may be that Michael is yet to experience challenging texts and tasks that require these types of strategies. As a Year 1 student Michael may not have been encouraged or required to discuss his thoughts at length, which would require reflecting internal and external comparisons and competence beliefs (assertion 9.42). This also links with his claim of 'never' discussing reading with others in the Marsi survey. Likewise, without being exposed to challenging texts and tasks, Michael may not have come across difficult texts, and therefore he would not be conscious of the need to pause and reflect on his reading, or have a need to guess unknown words. These assumptions also fit with the fact that Michael has had little need to use Support Reading Strategies in his Stage 1 reading experiences; therefore, his claim of having 'never' used these strategies is realistic. From this analysis it would appear that Michael has a realistic grasp on his own reading strategies, which reflect more the fact that he has been under-challenged in his reading experiences, rather than whether he has the ability or not to perform and use these strategies.

Table 8.15

Michael: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
- Activates prior knowledge - Confirms predictions	- Checks whether text content fits purpose - Makes decisions in relation to what to read closely - Uses text structures - Makes decisions in relation to what to read closely - Predicts what text is about - Confirms predictions
Problem Solving Strategies:	
- Pays close attention to reading	- Pauses to reflect on reading - Guesses meaning of unknown words
Support Reading Strategies:	
	- Takes notes while reading - Writes summaries of reading - Discusses reading with others - Underlines text information - Uses reference materials as aids - Paraphrases text information - Asks self questions

8.5.1.2 Sarah: Year 2

As Sarah did not complete the MARSI due to absence, there is no self-analysis data available to compare with her observed metacognitive behaviours.

8.5.1.3 Sian: Year 3

Section 8.3.1.3 discussed Sian's observed metacognitive behaviours focusing on the domain-specific knowledge she exhibited throughout her responses. Her responses in this study reflected a capable and efficient reader with skills beyond her typical peers.

In the MARSI self-report inventory Sian scored herself as 'never' using any of the strategies put forward by this tool. Yet her observed responses in this study showed her *setting purpose for reading, activating prior knowledge, confirming predictions* and returning to the text to *read some sections more closely and revisiting previously read information*. Therefore, it is clear that Sian's ability to realistically evaluate her own metacognitive and metacomprehension strategies is limited. This maybe explained through Tarricone's 9.42 assertion of 'perception of self-regulation ability is influenced by internal and external comparisons and self-competence

beliefs' (Tarricone, 2011, p. 170). It may be that Sian is overly critical of her own abilities or more sensitive to the meaning of 'never' and 'always' in relation to her own behaviours. Unfortunately, without being able to discuss this with her, it is not possible to confirm these assumptions.

In the MSI multiple-choice tool, Sian demonstrated limited knowledge of her own metacomprehension strategies as shown in Table 8.16. For example, *drawing on background knowledge* scored 6 negative answers, which would indicate this is a skill requiring significant teaching focus. Yet, her responses in this study revealed her repeatedly drawing on her background knowledge. For example, this knowledge enabled her to discuss pollution and related environmental issues in her poem responses. With the picture book she reflected on the realistic capabilities of rabbits, and the consequences of invasion on local inhabitants. In the short story, Sian reflected her understanding of how fiction can relate real-world ideologies, such as the value of kindness, and the importance of children needing to adhere to the experience and advice of parents. Sian's observed metacognitive performance (Table 8.6) reflects a very different outcome and ability level, than her MARSI (Figure 8.7) and MSI (Figure 8.8) results indicate.

Table 8.16

Sian: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
	<ul style="list-style-type: none"> - Setting purpose for reading - Activates prior knowledge - Confirms predictions - Makes decisions in relation to what to read closely - Uses text structures - Previewing text for content
Problem Solving Strategies:	
	<ul style="list-style-type: none"> - Pauses to reflect on reading - Writes summaries of reading - Guesses meaning of unknown words
Support Reading Strategies:	
	<ul style="list-style-type: none"> - Takes notes while reading - Underlines text information - Uses reference materials as aids - Revisits previously read information

Table 8.17

Sian: Overview of MSI results

Question Numbers	Specific Reading Behaviours	Correct	Incorrect
1, 4, 13, 15, 16, 18, 23	Predicting and Verifying	2	5
2, 3	Previewing	1	1
5, 7, 14, 17, 21,	Purpose setting	2	3
6	Self questioning	0	1
8, 9, 10, 19, 24, 25	Drawing from background knowledge	0	6
11,12, 20, 22	Summarising and applying fix up strategies	1	3

8.5.1.4 Isla: Year 5

While Isla was observed integrating all of the Tarricone metacognitive assumptions (Table 8.7) at some point across the three sessions, discrepancy exists between that result and her self-analysis results in the MARSI (Table 8.18) and MSI(Table 8.19) tools. For example, her observed behaviours reflected repeated examples of Isla *making decisions in relation to what to read closely* as she skimmed texts trying to answer the critical literacy questions presented in this study. There were also repeated examples of Isla *pausing to reflect on reading* and asking questions of the text. These examples contradict her self-reported metacomprehension understandings.

The results of Isla's observed metacognitive behaviours in this study (Table 8.7) do not fully align with her own perceptions of her reading practices recorded in the MARSI and MSI results below. It is unclear why this discrepancy exists.

Table 8.18

Isla: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
- Checks whether text content fits purpose - Skims to note text characteristics	- Makes decisions in relation to what to read closely
Problem Solving Strategies:	
- Pays close attention to reading - Visualises information read	- Pauses to reflect on reading
Support Reading Strategies:	
	- Uses reference materials as aids - Paraphrases text information - Revisits previously read information

Table 8.19

Isla: Overview of MARSI self-reported inventory results

Question Numbers	Specific Reading Behaviours	Correct	Incorrect
1, 4, 13, 15, 16, 18, 23	Predicting and Verifying	5	2
2, 3	Previewing	1	1
5, 7, 14, 17, 21,	Purpose setting	4	1
6	Self questioning	0	1
8, 9, 10, 19, 24, 25	Drawing from background knowledge	3	3
11,12, 20, 22	Summarising and applying fix up strategies	4	0

8.5.1.5 Ronald: Year 6

Ronald's self-reported strategies appear to support many of the behaviours observed across the three sessions for this study. However, there are some strategies Ronald believes he 'never' uses, which contradicts the behaviours observed across his three sessions. For example, Ronald was observed using pictures and the text to find specific information, which contradicts his report that he 'never' uses *text structures* or *previews text for content*. Also, within this study there were examples where Ronald *pause[d] to reflect on reading*, which again contradicts his self-report. As stated previously, the lack of employment of the Support Reading Strategies highlighted in the MARSI survey (Table 8.20) is explained by the fact the participants in this study have not used these strategies in their classroom practices. Generally, there is a good match between Ronald's observed metacognitive behaviours and his self-report results in Tables 8.20 and 8.21.

Table 8.20

Ronald: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
	<ul style="list-style-type: none"> - Setting purpose for reading - Skims to note text characteristics - Makes decisions in relation to what to read closely - Uses text structures - Previewing text for content
Problem Solving Strategies:	
<ul style="list-style-type: none"> - Reading slowly and carefully - Pays close attention to reading - Rereads 	<ul style="list-style-type: none"> - Pauses to reflect on reading - Visualises information read
Support Reading Strategies:	
	<ul style="list-style-type: none"> - Takes notes while reading - Writes summaries of reading - Underlines text information - Uses reference materials as aids - Paraphrases text information - Revisits previously read information

Table 8.21

Ronald: Overview of MSI results

Question Numbers	Specific Reading Behaviours	Correct	Incorrect
1, 4, 13, 15, 16, 18, 23	Predicting and Verifying	111	11
2, 3	Previewing	1	0
5, 7, 14, 17, 21,	Purpose setting	111	1
6	Self questioning	0	1
8, 9, 10, 19, 24, 25	Drawing from background knowledge	111	0
11, 12, 20, 22	Summarising and applying fix up strategies	1111	0

8.5.2 Group 2: Possible Talented Readers Metacognition Self-Report Surveys Compared With Observed Behaviours

8.5.2.1 Lee: Year 2

Some anomalies were found between what Lee self-reported in his MARSI results (Table 8.22) and the strategies observed across the three sessions he completed for this study. The Support Reading Strategies Lee marked as ‘never’ using, such as *note taking, summarising and*

underlining, were a realistic nomination. However, his belief that he does not *make decisions in relation to what to read closely* was contradicted during this study as he was observed at several points re-reading parts of the text when attempting to answer a question. In the MARSI results Lee recognises his developing problem-solving strategies and appears to give a realistic appraisal of the Global Reading Strategies he uses. Considering the difficulty some younger talented readers had in making realistic links between this inventory and their own strategy usage, Lee has demonstrated well-developed KoC and RoC strategies in comparison with other seven year olds in this study.

Table 8.22

Lee: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
- Pays close attention to reading	- Makes decisions in relation to what to read closely
Problem Solving Strategies:	
- Guesses meaning of unknown words	
Support Reading Strategies:	
	<ul style="list-style-type: none"> - Takes notes while reading - Writes summaries of reading - Underlines text information

8.5.2.2 Allan: Year 3

Reviewing Allan's reading profile gives a clue as to why he does not value *reading slowly and carefully* in his MARSI results (Table 8.23). In his profile he revealed that he did not start independent reading until Year 1, and when placed in the top reading group in Year 2 he described the experience as '*awesome*'. As a motivated reader, aware of the reading practices of his peers in the top reading group (Tarricone assertion 9.10), it may be his perception of a good reader is the speed one reads, and therefore, not a practice that is done *slowly and carefully*. The other Global Reading Strategies he has highlighted as 'always' in the MARSI likewise reveal his epistemic reading beliefs; however, these are necessary strategies employed by good readers of which he is aware. Once again, the Support Reading Strategies would not be experienced in a

Year 3 classroom, and therefore he has made a realistic observation. Allan's MARSI results show supported and some unsupported evidence compared with the observed behaviours reflected in Table 8.10.

Table 8.23

Allan: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
<ul style="list-style-type: none"> - Setting purpose for reading - Pauses to reflect on reading - Uses context clues - Uses text structures 	<ul style="list-style-type: none"> - Checks whether text content fits purpose - Predicts what text is about
Problem Solving Strategies:	
<ul style="list-style-type: none"> - Pays close attention to reading - Visualises information read 	<ul style="list-style-type: none"> - Reading slowly and carefully
Support Reading Strategies:	
	<ul style="list-style-type: none"> - Takes notes while reading - Writes summaries of reading - Underlines text information - Uses reference materials as aids - Paraphrases text information - Asks self questions

8.5.2.3 Jacob: Year 5

As with other participants in this study, in his MARSI survey Jacob nominated a number of Support Reading Strategies as 'never' being employed (Table 8.24), as these have not been part of his classroom reading experiences. In the observed sessions, Jacob revealed excellent memory strategies, being able to recite a quotation from the picture book without returning to the book. However, this ability may also be disadvantaging him. For example if he 'never' *revisit[es] previously read information* as was demonstrated in this study, he therefore needs to be able make accurate interpretations of what he reads in the first viewing. Jacob may have picked up on the metaphor of the British settlement of Australia in the picture book if he returned to the text at least once more during the questioning phase. He indicates in the MARSI survey (Table 8.24) that he *visualises information read, pays close attention to reading and rereads*. Therefore, Jacob has had limited experiences suggesting his reading practices and strategies may be limited. The lack of self-questioning in the MSI (Table 8.25) indicates this might be a skill Jacob would

benefit from in future lessons, and he would certainly benefit from more challenging and advanced reading tasks to enable the development of stronger problem solving and checking strategies in his reading skills repertoire. There appears to be a good correlation between Jacob's self-reporting results in the MARSI and MIS, and the observed behaviours completed for this participant in this study.

Table 8.24

Jacob: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
<ul style="list-style-type: none"> - Setting purpose for reading - Activates prior knowledge - Checks whether text content fits purpose - Reading slowly and carefully - 	<ul style="list-style-type: none"> - Skims to note text characteristics - Uses textual features to enhance reading comprehension - Uses context clues
Problem Solving Strategies:	
<ul style="list-style-type: none"> - Pays close attention to reading - Adjusts reading rate - Visualises information read - Rereads 	
Support Reading Strategies:	
	<ul style="list-style-type: none"> - Underlines text information - Uses reference materials as aids - Revisits previously read information

Table 8.25

Jacob: Overview of MSI results

Question Numbers	Specific Reading Behaviours	Correct	Incorrect
1, 4, 13, 15, 16, 18, 23	Predicting and Verifying	3	4
2, 3	Previewing	1	1
5, 7, 14, 17, 21,	Purpose setting	3	2
6	Self questioning	0	1
8, 9, 10, 19, 24, 25	Drawing from background knowledge	3	1
11,12, 20, 22	Summarising and applying fix up strategies	4	0

8.5.3 Group 3: Typical Readers Metacognition Self-Report Surveys Compared With Observed Behaviours

8.5.3.1 Bradley: Year 2.

As there were a number of Tarricone assertions not observed across the sessions completed by Bradley for this study, Table 8.26 presents this information for comparison with his MARSI

(Table 8.25) results. The low level of Bradley's metacognitive behaviours observed in this study are supported by some unrealistic results in his self-report MARSI. For example, while all other participants recognised that they 'never' undertake Support Reading Strategies, such as *underlin[ing] text information*, Bradley has indicated that as a Year 2 student he 'always' completes this strategy during his reading. It is assumed that Bradley has either not read the instructions correctly, or not understood the goals of the task.

There is little correlation between Bradley's self-report MARSI (Table 8.25) results and his behaviours observed for this study. Bradley has been well placed in *the typical reading* group for his age and abilities.

Table 8.25

Bradley: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
<ul style="list-style-type: none"> - Uses textual features to enhance reading comprehension - Confirms predictions - Skims to note text characteristics - Makes decisions in relation to what to read closely - Uses context clues - Uses text structures - Previewing text for content - Predicts what text is about - Makes decisions in relation to what to read closely 	<ul style="list-style-type: none"> - Setting purpose for reading - Checks whether text content fits purpose
Problem Solving Strategies:	
<ul style="list-style-type: none"> - Pays close attention to reading - Guesses meaning of unknown words - Reading slowly and carefully - Adjusts reading rate - 	<ul style="list-style-type: none"> - Pauses to reflect on reading
Support Reading Strategies:	
<ul style="list-style-type: none"> - Writes summaries of reading - Discusses reading with others - Underlines text information - Uses reference materials as aids - Revisits previously read information 	<ul style="list-style-type: none"> - Takes notes while reading

Table 8.26

Bradley: Strategies NOT observed across observation sessions using Tarricone's Metacognitive Taxonomy

9.06	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
9.08	Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects
9.10 Person	Self-knowledge involves self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts
9.14 Task	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
9.15 Strategy	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
9.18 Strategy	Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)
9.19	Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
9.20	Explicit knowledge prompts implicit representations and vice versa.
9.24 Task	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
9.26 Strategy	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
9.31	Context and contextual conditions influence strategy use, transfer and regulation
9.40	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
9.42	Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs
9.43	Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.5.3.2 Leila: Year 4.

Leila demonstrates a developing level of self-reflection in her MARSI (Figure 8.27) results evidenced by some contradictory notations. For example, she has listed *paying close attention to reading* in both the 'always' and 'never' columns, which may indicate a level of unsureness about the task or her own reading practices. In the MARSI 'never' column for Support Reading Strategies, she demonstrate some realistic understandings with regards to the types of reading experiences she has encountered at school. The results in Table 8.28 show that, compared with her *talented reader* age peers, there are a significant number of Tarricone's assertions not observed during this study. As a *typical* Year 4 reader, Leila has shown some metacognitive behaviours in this study, although not to the same level as her *talented* peers.

Table 8.27

Leila: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
- Setting purpose for reading - Predicts what text is about - Confirms predictions	
Problem Solving Strategies:	
- Pays close attention to reading	- Pays close attention to reading
Support Reading Strategies:	
	- Takes notes while reading - Paraphrases text information - Uses reference materials as aids - Revisits previously read information

Table 8.28

Leila: Strategies NOT observed across observation sessions using Tarricone's Metacognitive Taxonomy

9.06	Self-appraisal involves the reflective, static assessment or evaluation of one's knowledge, ability, task, context or strategy applicability
9.14 Task	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
9.15 Strategy	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
9.18 Strategy	Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)
9.19	Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
9.20	Explicit knowledge prompts implicit representations and vice versa.
9.24 Task	Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]
9.26 Strategy	Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]
9.28 Task	Conditional knowledge supports awareness and knowledge of task type, demands and context
9.40	Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)
9.42	Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs
9.43	Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.5.3.3 Connor: Year 6.

What is evident in Connor's results is that by Year 6 *typical readers* may have a more realistic understanding of their reading strategies, compared to younger *typical readers*. Connor's

MARSI results (Table 8.29) appear to have a fairly realistic grasp of his metacognitive behaviours. However, it is unclear why he has included *writes summaries of reading* in the ‘always’ column, unless this is a common reading activity he does in the classroom. Connor produced some very positive results in the MSI (Table 8.30) test, indicating he has a good understanding of his own reading strategies, and those required by effective readers. Table 8.31 results show only 6 Tarricone assertions were not observed during this study. While this number is not as strong as the other Stage 3 *talented readers*, it does show that he has a strong understanding of the necessary metacognitive strategies required for successful reading practices. Connor’s MARSI and MSI results to some extent reflect the observed metacognitive behaviours across this study (Table 8.14).

Table 8.29

Connor: Overview of MARSI self-reported inventory results

ALWAYS	NEVER
Global Reading Strategies:	
- Activates prior knowledge - Predicts what text is about	-
Problem Solving Strategies:	
- Reading slowly and carefully - Pauses to reflect on reading	
Support Reading Strategies:	
- Writes summaries of reading	- Takes notes while reading - Underlines text information

Table 8.30

Connor: Overview of MSI results

Question Numbers	Specific Reading Behaviours	Correct	Incorrect
1, 4, 13, 15, 16, 18, 23	Predicting and Verifying	7	0
2, 3	Previewing	1	1
5, 7, 14, 17, 21,	Purpose setting	4	1
6	Self questioning	1	0
8, 9, 10, 19, 24, 25	Drawing from background knowledge	4	2
11,12, 20, 22	Summarising and applying fix up strategies	4	0

Table 8.31

Strategies NOT observed across Connor's 3 sessions using Tarricone's Metacognitive Taxonomy

9.14 Task	Task knowledge and sensitivity is supported by reflection. It enables awareness of task complexity, learner limitations and cognitive processes, and facilitates planning to meet task demands.
9.15 Strategy	Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving
9.18 Strategy	Strategy knowledge supports regulation such as planning, monitoring and control (HOA.35)
9.19	Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems
9.20	Explicit knowledge prompts implicit representations and vice versa.
9.43	Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.6 Metacognition Employed During Critical Literacy

One major focus of this study has been to identify connections between critical literacy and metacognition. A number of clear links were drawn between the employment of metacognitive strategies for the successful engagement and answering of critical literacy questions across this study. Two metacognitive assertions repeatedly identified across all of the successfully answered critical literacy questions were Knowledge of Cognition (KoC) assertion 9.28, and Regulation of Cognition (RoC) assertion 9.33.

Assertion 9.28 involves Conditional knowledge demonstrating awareness and knowledge of the type, demands and context of a task. In this study, this was revealed when participants were able to perform a task as dictated in the written instructions, such as reading a question out loud and answering it. If participants either missed reading a question and/or did not fully answer all parts of the question, then they were not scored as achieving this assertion. A level of domain or literacy knowledge was required to successfully attain this assertion.

Assertion 9.33 involves a complex set of strategies and therefore, there were many opportunities for participants to be observed regulating their cognition. This assertion includes planning, monitoring and controlling responses. In this study, behaviours which were identified as indicators of this assertion included external utterances and pauses reflecting inner thinking, cognitive processing, monitoring clarity and accuracy through detection of errors, self-correction

and/or repetition and the use of modal language to modulate expression and ideas expressed.

Most often, participants who offered justified opinions as part of their responses elicited many of these regulatory behaviours as reflective cognition took place. Even if a participant was unsure how to answer a question, often their external utterances or pausing evidenced this assertion. However, in responses where the participant was particularly cautious in their responses, or conversely confident, these indicators were not observed.

Assertion 9.18 requires strategy knowledge in order to support regulation behaviours, such as planning. Responses that offered complex, carefully considered explanations demonstrated a participant's understanding of literacy strategies and self-regulation. This assertion was shown to be a necessary metacognitive behaviour for complex critical literacy interaction.

Related closely to both assertions 9.28 and 9.33 was the RoC assertion 9.40. This assertion recognises how self-regulated learners implement strategies and monitor and control these, and their motivation to address task demands and attain desired goals, and deemed by Tarricone as a Higher Order Assertion [HOA 46]. This assertion proved important for the completion of critical literacy activities in this study.

The next most common assertion employed by participants in this study was 9.24. This assertion required Procedural Task knowledge, such as the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]. In this study, identifiers for this assertion included the employment of domain-specific knowledge, such as using literacy metalanguage within the response, or including ingredients of the question within the answer. Flexible application of literacy and self-reflection strategies was essential to successfully completing the critical literacy questions of this study.

Employing thinking verbs in the question design encouraged participants to connect with assertion 9.10. This assertion requires a demonstration of self-knowledge, such as self-awareness, knowledge of strengths and weaknesses, knowledge of when one knows and does not know, knowledge of strategies and applicability in different contexts. Self-knowledge and an

understanding of how to effectively apply literacy strategies was essential in the successful answering of critical literacy questions in this study.

Assertion 9.8 was evident when participants made connections and associations between objects such as the text, real-world experiences or personal beliefs. This assertion has strong connections with critical literacy theory as readers require connotative knowledge if they are to comprehend and connect with a text at a deeper level (Luke & Freebody, 1999). By its nature this assertion required a transferability of skills and knowledge for successful engagement with the critical literacy question.

Assertion 9.43 was observed when participants discussed their personal beliefs within their answers. This assertion has strong connections with critical literacy theory, as the detection of bias and inequity requires an understanding of one's own belief systems. Some participants such as Sarah, Jacob and Isla were more comfortable expressing their beliefs than others.

The next most common assertion observed in participants in this study was 9.15, which required understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. This assertion is important for complex problem solving and was evident in the more complex answers. When responses showed problem solving techniques and solid domain-specific knowledge in the answering process, this assertion was awarded. The challenging nature of critical literacy encouraged some of the more able participants to demonstrate these multiple strategies.

It is important to note that while this study showed how metacognitive strategies enabled successful engagement in critical literacy tasks, the employment of metacognition did not always result in a successful answer to critical literacy questions. For example, in Leila's DAF (Figure 8.4) she can be observed referring to her own capabilities, using external utterances and cognitive pausing. However, she is unable to produce a successful answer for this question.

Metacognitive Knowledge		POEM Q3: Could this really happen?	Metacognitive Regulation	
KoP	Refers to own capabilities, strengths and weaknesses. (Pink)	✓	✓ External utterance suggest inner thinking before answering fully	Planning
KoT	Completes requirements of task i.e. reads question and answers it		✓ Cognitive processing evident via pausing	Monitoring
KoS	Elaborates / draws on text evidence to support		Self- commentates	Control
	Uses metalanguage in answer		Detection of error/s during answer	
WORD COUNT: 8			Self-corrects	
Knowledge of Cognition			Repeats a strategy to check accuracy	
9.10 Refers to own capabilities through verbalisation of personal pronoun or action [Declarative / Person].			Use of modal language	
Regulation of Cognition				
9.33 Evidence of external utterances and pauses reflecting inner thinking reflective of cognitive processing before or during the response indicates goal specification demonstrating planning goals related to one's knowledge / understanding of the requirements of the task.				
<i>Multiple Critical Literacy elements explored</i>	<i>Single Critical Literacy element explored</i>	<i>Poor Critical Literacy quality answer</i>		
		Opinion offered without justification		

Figure 8.4. DAF: Leila – Poem Question 3.

Successful responses to critical literacy questions depended on the type of metacognitive assertion that was employed. Responses that reflected strategy knowledge were more likely to achieve successful answers to the critical literacy questions. It is acknowledged that this may be as a result of the design of the DAF and will be discussed further in the Limitations of the Study. The most successful metacognitive assertions for enabling critical literacy in this study were shown to be:

Knowledge Of Cognition

9.8 Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects

9.15 Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving

9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]

Regulation Of Cognition

9.20 Explicit knowledge prompts implicit representations and vice versa.

9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation

8.6.1 Talented Versus Typical Readers' Employment of Metacognition During Critical Literacy Discourse

As shown in this chapter there were few differences between the *talented* and *possibly talented readers* in this study. Therefore, this next section will combine Groups 1 and 2 as *talented readers*. Some significant differences in the level and type of assertions employed by *talented* and *typical readers* can be seen in Table 8.32. The Table compares and highlights the assertions employed by each participant. Where assertions were not used, the participant and the assertion have been shaded to make the comparison clearer.

Table 8.32

Comparison of Talented and Typical Readers' employment of Tarricone's Metacognitive Assertions During Critical Literacy Discourse

		Knowledge of Cognition		Group 1 TALENTED			Group 2		Group 3 TYPICAL			
DECLARATIVE	Person	Michael 7 yrs	Sarah 8 yrs	Sian 9 yrs	Isla 10 yrs	Ronald 12	Lee 7 yrs	Allan 9 yrs	Jacob 11 yrs	Bradley 8 yrs	Leila 9 yrs	Connor 12 yrs
		✓	✓	✓	✓	✓	✓	✓	✓			✓
	TASK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
STRATEGY	Person	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
	Task	✓	✓	✓	✓	✓	✓		✓			
	Strategy		✓	✓	✓	✓	✓	✓	✓			
		✓	✓	✓	✓	✓	✓	✓	✓			

PROCEDURAL	9.19 Through experience procedural knowledge can become implicit, automatic refined strategies or skills initiated in familiar problems		✓	✓	✓	✓	✓	✓	✓		
	9.20 Explicit knowledge prompts implicit representations and vice versa.		✓	✓	✓	✓	✓	✓	✓		
	TASK	9.24 Procedural task knowledge facilitates the selection and flexible application of task-specific strategies to match cognitive goals supporting task completion [HOA.38]		✓	✓	✓	✓	✓	✓		✓
CONDITIONAL	STRATEGY	9.26 Task sensitivity influences the identification of appropriate and applicable strategies and subsequent strategy application [HOA.39]	✓	✓	✓	✓	✓	✓	✓		✓
TASK	STRATEGY	9.28 Conditional knowledge supports awareness and knowledge of task type, demands and context	✓	✓	✓	✓	✓	✓	✓	✓	✓

Regulation of Cognition

SELF REGULATION	9.33 Goal specification involves planning goals related to one's knowledge, process monitoring is monitoring planning goals, monitoring clarity is awareness of the extent of clarity of that knowledge, and monitoring accuracy is determination of the degree of accuracy knowledge.		✓	✓	✓	✓	✓	✓	✓	✓	✓
	STRATEGY	9.40 Self-regulated learners self-initiate strategies and monitor and control them and their motivation to address task demands and attain desired goals (HOA46)		✓	✓	✓	✓	✓	✓	✓	✓
	PERSON	9.42 Perception of self-regulation ability is influenced by internal and external comparisons and self-competence beliefs			✓		✓	✓	✓		✓
		9.43 Internal verbalisation can include personal beliefs and influences the development of self-regulation		✓	✓	✓	✓	✓	✓		

While some talented readers did not employ some assertions, a number of conclusions are drawn from this table.

Typical readers were poorest at:

- Declarative Task Knowledge, such as reflection, cognitive processes and planning to meet task demands.
- Declarative Strategy Knowledge, such as transferring skills and strategies across contexts. These are important for problem solving / monitoring, planning and control.
- Procedural Knowledge, such as initiating necessary strategies in familiar problems.

- Self-regulation Knowledge (person), such as expressing personal thoughts and ideas.

Age and experience may account for an improvement in the following metacognitive behaviours. The two youngest typical readers did not demonstrate:

- Knowledge Of Cognition, including reflective evaluation of one's knowledge abilities applied to task, context and strategies.
- Procedural Knowledge, such as selecting task-specific strategies to match cognitive goals and identifying and applying appropriate strategies.
- Regulation Of Cognition, including self-regulation, such as monitoring and controlling motivations to address task demands and attaining desired goals.
- Self-regulation, such as comparing internal and external self-competence beliefs.

Age, rather than reading ability showed to be a variable in the following results. The very youngest participants did not demonstrate:

- Connotative Knowledge, including declarative knowledge that facilitates associations between objects.
- Self-awareness of strengths and weaknesses and applying strategies in different contexts.

8.7 Language Differences Between Talented and Typical Readers

Clark, (1997), Collins and Aiex(1995), Halsted(1990), Kaplan(1999), Reis et al. (2004) and Reis (2008) have stated that, as part of their defining characteristics, talented readers often demonstrate high-level verbal ability and advanced language skills. Data collected in this study appears to support these conclusions, and is discussed in the following section.

8.7.1 Verbs

Across the eleven case studies the more verbose a response the more explicit reasoning, connection building and thinking behaviour was evident within the answer. Conversely, the brevity of a response made observing thinking behaviours, reasoning and connection building

more difficult. While comparing the number of words employed to answer questions has limited value in determining or drawing conclusions between verbosity and metacognition, analysing this aspect did reveal that in this study the Group 3 *typical readers* were generally less verbose than their Group 1 and 2 *talented reader* peers, although there were some *talented readers* also with low word count averages. These aspects are displayed in Table 8.33.

Table 8.33

Case studies: response word counts.

Participant	Age	Grade	Group	PAT-R	Questions Answered	Word total	Average
Michael	7.5	1	1	91%	25	326	13
Sarah	8.3	2	1	99%	27	1458	54
Lee	7.11	2	2	88%	27	540	20
Bradley	8.2	2	3	66%	15	135	9
Sian	9.6	3	1	90%	27	717	26.5
Allan	9.5	3	2	82%	27	695	26
Leila	9.4	4	3	65%	15	104	7
Jacob	11.8	5	2	86%	19	1263	66
Isla	10.2	5	1	97%	26	1224	47
Ronald	12.2	6	1	97%	26	711	27
Connor	12.1	6	3	66%	27	636	23.5

Table 8.33 overviews the number of questions answered, the total word count for these questions and the calculated average word count for each of the eleven case studies. In this small sample the two youngest *typical readers*, Bradley and Leila, exhibit a far lower average word count than their Stage 1 and 2 peers. Connor, the Stage 3 *typical reader* has achieved a word count average less than his peers, and on par with the Stage 2 *talented readers*. Michael scored the lowest word average of Group 1 *talented readers*, which could be reflective of his young age, inexperience and lack of confidence with the tasks presented in this study. Ronald and Isla, who achieved the most multiple critical literacy scores across this study, did so with very different levels of verbosity. Isla used almost twice as many words as Ronald, and while her responses

were far more rich and complex, they achieved similar outcomes in the scoring procedures adopted for this study. With the exception of Sian and Jacob, the girls in this group scored higher word counts than the boys. As gender-based issues were not part of the purpose of this study, no conclusions are drawn from this last observation.

8.7.2 Sophistication of Language

Another anecdotal characteristic found in the literature by Reis et al. (2004) claims that *talented readers* use more sophisticated language than their typical peers. Table 8.34 presents some of the examples collated from the case studies that reflect levels of advanced vocabulary or expressive phrases that might be considered advanced for the age of the responder.

Table 8.34

Examples of advanced language and phrasing

Group 1	Michael 7.5 years Year 1	P Q3	... <i>pollution</i> is getting pretty bad because of all the cars and people throwing cigarettes and paper bags everywhere, rubbish everywhere
		P.B. Q4	<i>Definitely</i> no – they're not <i>intelligent</i> enough
	Sarah 8.3 years Year 2	P.B. Q8	... this, is bad, you are taking away my babies and – it's just bad! And it's <i>horrible</i> .
		PB Q10	... <i>entertainment</i> and learning because <i>scientists</i> are very important ... put in their <i>natural habitat</i> .
		PB Q15	To put them in their <i>environment</i> – leave them alone, let them live.
		SS Q13	I think the wolf is unfair, ugly, (<i>laughs to self</i>) – <i>unfair, ugly</i> – and just – and <i>selfish!</i>
	Sian 9.6 years Year 3	PB Q10	From the author's <i>point of view</i> ...
		SS Q12	I think he was kind and <i>generous</i> and liked to help people.
		PB Q1	... <i>basically</i> from the point of animals
	Isla 10.2 years Year 5	PB Q7	<i>Most definitely</i> the rabbits because they're the people <i>destroying</i> the land
		PB Q3	<i>Europeans</i> came to Australia and took the land away from the <i>Aborigines</i>
		PB Q9	... because it ended on a bit of a <i>cliff hanger</i>
		PB Q13	... image <i>impress</i> on children how <i>people are being divided</i>
		SS Q16	...it's just for <i>pleasure</i> .
		SS Q11	I think Grandmas can be a lot tougher than they are made out to be.
		P Q6	<i>recycle</i> , be green kind of thing – <i>environment</i> ...
Group 2	Ronald 12.2 years Year 6	PB Q3	... the <i>English colonists</i> ...
		PB Q7	... <i>medieval</i> type of weapons.
		PB Q13	... he thinks it's <i>quite drastic</i> ...
		PB Q15	... <i>retelling, recalling</i> things that have happened ...

	SS Q 7	I don't <i>particularly</i> think that any of them ...
	PB Q15	... something about a <i>situation of war</i> .
Lee 7.11 years Year 2	PB Q 11	... <i>obviously</i> because they're being attacked by all the rabbits
	P Q 8	An air raid is like all this type of <i>pollution</i> going into the air
	PB Q11	it sounded like very close to the <i>convicts invading Aboriginals</i> .
	PB Q 0	... people that have never <i>experienced any war</i> should do, should read this book and see how <i>terrible</i> it was for the people that did have war.
Allan 9.5 years Year 3	SS Q 8	... she had short eyesight and that's a bit of a <i>disadvantage</i>
	SS Q12	... he's a <i>happy fellow</i> and also a <i>sneaky fellow</i>
	SS Q16	... and <i>dreadful</i> things like being eaten can happen
	P Q1	... it's a <i>decent</i> poem ...
	P Q7	... the whole <i>human race</i> ...
Jacob 11.8 years Year 5	PB Q7	... <i>pretty interesting</i> when you think about it like that ...
	PB Q10	... it's <i>in their nature</i> seeing as ...
	PB Q15	<i>I'm not one to judge</i> the reader, er, author's opinion on this ...

There was no evidence of unusual or advanced language in the responses of the Group 3 participants in this study.

8.7 Conclusion

This chapter presented an overview of the findings of this present study. First, it reviewed and compared the critical literacy results of the talented, possibly talented and typical readers. The results showed that advanced domain-specific literacy knowledge was a significant enabler in the ability to successfully respond to the critical literacy questions presented across the tasks of the study. The chapter then reviewed the metacognitive behaviours observed, focusing on the results gained by each of the participants selected for the case studies. These results were then compared with each participant's MARSI and MSI results. A discussion was presented about how the metacognitive behaviours observed across this present study reflected certain assertions from Tarricone's metacognitive taxonomy. Finally, the chapter overviewed and compared the use of language employed by the talented and typical readers participating in this current study. The significance of all of these results will be discussed in Chapter 9.

CHAPTER NINE: DISCUSSION OF RESULTS

It has often been suggested that literacy is one of the most powerful carriers of cognitive ability.

Perkins and Salomon, 1988

9.1 Introduction

The aims of this study were to discover if a relationship exists between metacognition and critical literacy, and how the employment of metacognition differs in young talented readers compared with typical readers. Both of these issues have been identified as areas requiring study. Griffith and Ruan (2005) stated that ‘no existing literature specifically points out the connections between metacognition and critical literacy’ (p. 11), and Reis (2008) declared that ‘little research has focused on identifying and teaching talented readers, or using the pedagogy of gifted education to encourage and develop advanced, continuous reading progress in talented readers’ (p. 655).

In this chapter, the results of the present study will be discussed in relation to each of the research questions. The themes that emerged and the implications of the findings for young talented readers and their teachers will be discussed.

9.2 Research Question 1

If metacognition is an aspect of critical literacy discourse, what metacognitive strategies are required for the successful analysis, understanding and critiquing of texts?

The nature of critical literacy requires the reader to delve beyond literal interpretations and first impressions of a text, to discover the underlying meanings that have been woven into its fabric. It recognises that all texts are biased, and products of social, cultural and economic influences reflective of the context within which the text has been created. Australian critical literacy evolved from Freirean roots and metamorphosed into its current version under the influence of Halliday’s (1985) lexical and grammatical theory, focusing on texts as ideological

representations, social relations and textual formations. In classrooms, this translates as ‘talking about the technical characteristics, social functions and contexts of text’ (Luke, 2000, p. 7). Australian critical literacy encourages students to discover how texts represent the world. To uncover the meaning within a text, students must draw on their schemata and sociocultural understandings. In doing this they are able to make links between their own experiences, identity and cultural knowledge of the world, through the lens of literacy knowledge and practices. It is a complex and dynamic process that has been explored from a pedagogical perspective for over twenty years. While many studies have demonstrated links between metacognition and the reading process (Baker & Brown, 1984; Brown, 1985; Paris, Wasik & Turner, 1991; Pressley & Gaskins, 2006), the relationship between metacognition and critical literacy has not been investigated until this study.

The research field of metacognition sees a community lacking in rigour, continuity and shared understandings (Schraw, 2009; Shaughnessy, Veenman & Kleyn-Kennedy, 2008). The publication of Tarricone’s (2011) conceptual framework and taxonomy of metacognition in 2011 offered a ‘comprehensive and systematic overview of the literature on metacognition’ (Moshman, 2010, cited in Tarricone, 2011, p. xv), finally giving some necessary synthesis to the field. Tarricone’s conceptual framework begins with two supercategories of Knowledge of Cognition and Regulation of Cognition augmenting into a series of subcategories and elements presented as assertions. This framework provided the necessary scaffolding and theoretical connections within which observational data for this present study could be situated.

For over twenty years, metacognition was believed to be a ‘late developing skill’ in children (Baker, 2005; Brown, 1985; Griffith & Ruan, 2005). This assumption was largely based on the evidence gathered using data collected from self-report inventories and surveys designed for adults (Waters & Kunnmann, 2010). Recent research in the United Kingdom, such as that by Whitebread et al. (2008) observing metacognition in young children, is challenging these previously held assumptions through the employment of observational methods rather than self-

reporting tools. This present study adapted Whitebread et al.'s Independent Coding Framework for Learning (C.Ind.Le) to design a Discourse Analysis Frame (DAF). The DAF's specific purpose was to identify metacognitive behaviours through the close analysis of responses of children aged 7 to 12 years as they engaged in critical literacy tasks.

All of the participants in this present study were observed engaging metacognitive strategies, as identified by Tarricone's taxonomy and assertions, to different and varying degrees in their responses to the critical literacy questions asked. It is acknowledged that a number of these assertions were employed by the participants simply to enable general reading comprehension (e.g. assertions 9.18, 9.24, 9.28, 9.31, 9.33 and 9.40). However, some metacognitive assertions were identified as directly enhancing and enabling successful interaction with the critical literacy questions. For example, assertion 9.15 (*Strategy knowledge relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks. It is especially important for complex problem solving*) was visible when participants transferred and applied known strategies to new and different contexts. The knowledge and application of this assertion within the tasks allowed participants to answer unique and unfamiliar critical literacy questions successfully. Pintrich (2002) identified strategy knowledge as an essential component of problem solving in that it supports planning, monitoring and control when undertaking tasks. Tarricone (2011) notes that strategy knowledge 'relies upon understanding, reflection and awareness of the value and transferability of different strategies in various contexts and tasks (p. 159). Without this strategy knowledge, the successful answering of critical literacy questions is not viable, and therefore one connection between metacognition and critical literacy has been confirmed.

Another example of how metacognitive competency enabled successful answering of critical literacy questions was evident when participants drew on their personal understandings of concepts or events of the text to 'make connotations between information' (Tarricone, 2011, p. 158). Labelled 'connotative knowledge' it required participants to draw on their declarative

understandings to make associations between themselves, their understandings of the world and the text. Connotative knowledge is reflected in Tarricone's assertion 9.8 (*Connotative knowledge relies upon declarative knowledge to facilitate associations made between objects*) and when applied to the task provided the most successful responses in this present study. A connection between connotative knowledge and critical literacy can be drawn, as both require reflection on personal understandings, biases and internal and external representations.

The inclusion of 'connotative knowledge' as an element of metacognition deserves scrutiny and further discussion. Cornoldi (1998) appears to have been the first to introduce connotative knowledge as a necessary category of metacognition. In the literature reviewed, however, apart from Tarricone's inclusion of Cornoldi's work in this area, there does not appear to be further use or implementation of the term in other research. Cornoldi's (1998) article made brief reference to the concept but failed to develop it beyond a simple description and example. Tarricone (2011) included connotative knowledge in her metacognitive taxonomy as a higher order assertion explaining the term as relying 'upon declarative knowledge to make connotations between information' (p. 158). Connotation as a noun is defined as 'an idea or feeling which a word invokes for a person in addition to its literal or primary meaning' (Oxford Dictionary online). As such, connotative knowledge might be considered more than simply a sociocultural construct, as it is influenced and affected by personal experiences and knowledge. Another similar form of knowledge relying on personal knowledge and understandings is inferential knowledge. Tarricone (2011) reviews the work of Dewey and Kant and discusses how reasoning is based on knowledge and inferences to move between judgements or beliefs to reach a solution or conclusion (p. 23). In the context of reading, inferential knowledge requires the reader to develop judgements based on information alluded to in a text (Israel & Massey, 2005).

Inferential knowledge, like connotative knowledge relies on declarative knowledge to facilitate associations made between objects. Person, task and strategy variables influence how and if inferential knowledge is employed, as it is with connotative knowledge. There is no doubt

that Tarricone's taxonomy of metacognition is an outstanding project drawing together a vast array of literature and providing an excellent and highly valued scaffold for investigating the relationships and concepts associated with metacognition. Given that the vastness of the taxonomy suggests decisions to include and exclude concepts was a careful process, it is just unclear why connotative knowledge was included in the taxonomy to the exclusion of other similar processes. That said, given the small number of participants in the present study, the inclusion of connotative knowledge provided a valuable connection to be drawn between metacognition and critical literacy.

Griffith and Ruan (2005) stated that, while no research has to this point identified connections between metacognition and critical literacy they believed 'readers with critical literacy knowledge and skills are most likely to employ metacognitive strategies for text understanding and critiquing' (pp. 11-12). However, the results from this present study suggest that prior critical literacy knowledge is not necessary to being able to engage in critical literacy discourse. While appropriate question design is the vehicle for this engagement, it is proposed that it is metacognitive competency that enables successful critical literacy discourse. For example, to evaluate a text's social functions, technical characteristics and contexts, such as is required by critical literacy, the reader must draw on their self-knowledge and domain-specific knowledge. The reader must reflect on their personal understandings and knowledge of the world, while maintaining task sensitivity and goals to enable successful interaction with critical literacy questions. Knowledge and regulation of one's cognition not only enables, but also is essential for successful critical literacy discourse. Therefore, critical literacy does require the employment of metacognitive strategies for successful analysis, understanding and critiquing of texts.

9.3 Research Question 2

How adapt are young talented readers at employing metacognition than their age peers, when performing critical literacy discourse?

While all participants demonstrated varying degrees of metacognitive behaviours during the critical literacy tasks in this present study, it was the talented readers who were viewed consistently drawing on a wider set of metacognitive strategies compared with their typical peers. However, of the typical readers, the oldest participant drew on metacognition with greater frequency than the younger typical readers. These results support the growing evidence (Whitebread et al., 2008) that refutes the previously held belief that metacognition is a late developing skill, and in fact it can be identified in early childhood. It is suggested the reason for this disparity in the evidence is because of the data collection methods used on young children (Whitebread et al., 2008; Waters & Kunnmann, 2010). Metacognitive research with young children increasingly supports the inappropriateness of self-report surveys and questionnaires as solely reliable identifiers of metacognition in young readers, and the results from this present study on this point will be discussed further in section 9.6.2.

Not only did this present study highlight how talented readers employed metacognition more frequently than their typical reader peers when answering critical literacy questions, but there were also strong similarities found between the metacognitive behaviours observed and the metacomponents highlighted in Sternberg's (1981) componential theory of intellectual giftedness. The talented readers were more successful than the typical readers in recognising 'the nature and demands of the task to be performed' (Sternberg, 1981, p. 87), generating solutions to the problems faced in deciding how to answer the critical literacy questions, and selecting effective strategies for successful execution of the tasks. There was significant evidence of the talented readers drawing links and conclusions between real world, self-knowledge and the texts. Regulatory knowledge was clearly superior in the talented readers compared with the typical readers as they planned, monitored and controlled their responses during the answering process.

This comparison between the behaviours observed in the talented readers and Sternberg's componential theory adds further weight to the assertion of this thesis that talented readers deserve to be situated in gifted education, and will be discussed further in section 9.6.1.1.

9.4 Research Question 3

What metacognitive strategies are employed by talented readers compared to typical readers when answering critical literacy questions?

Data collected across the eleven case studies revealed a connection between reading proficiency and the employment of metacognition. Talented and typical readers differed in their ability to transfer skills and strategies across different contexts, as well as monitoring, planning and controlling responses to meet the needs of the tasks necessary for effective problem solving. Typical readers also appeared to have more difficulty expressing personal thoughts and ideas in their responses than the talented readers, although not all talented readers expressed their personal beliefs in their answers.

There was some evidence that with age and domain-specific experience typical readers become more adept at selecting the necessary task-specific strategies to match task goals. This included reflection and evaluation skills that enable self-knowledge and motivation to address the demands of the task. It may be that age and experience also increases the ability to apply connotative knowledge that facilitates associations between objects, self-awareness of one's belief systems, and strengths and weaknesses in applying strategies to different contexts. From as young as seven years of age, the talented readers in this study demonstrated regulatory strategies and metacognitive behaviours that enabled the necessary problem solving skills (*assertion 9.32: Regulatory strategies support the awareness of metacognitive experiences especially during problem solving*) to adapt and transfer knowledge to the unfamiliar context of critical literacy (*assertion 9.29: Conditional knowledge supports the adaptive application and transfer of strategies in unfamiliar, complex problems and contexts*). In these tasks the talented readers

consistently demonstrated their self-regulation abilities and an awareness of their knowledge, beliefs and volition (*assertion 9.38: Self-regulated learners are aware of their knowledge, beliefs and volition*). This was evidenced in the prolific use of cognitive processing language such as ‘I think ...’ and external utterances suggesting inner thinking across most answers given by the talented readers compared with the responses given by the typical readers. Clark (1997) identified talented readers as having above average capacity to process information and thoughts at an accelerated pace as well as being able to integrate ideas. This present study reflects this observation in the evidence of external cognitive processing that the tasks required of the readers. The uniquely challenging aspect of the tasks, coupled with the think-aloud protocols, encouraged and captured the thinking of participants and showed a marked difference in the thinking processes of talented readers compared with their typical peers. Differences between these two groups will be further explored in the following section.

9.5 Research Question 4

How do talented readers differ from their typical peers?

During this study some talented readers exhibited an effective working memory in their responses, evidenced by reciting chunks of the text from memory. Although the instructions for each task allowed participants to return to the text at any time, most participants, both talented and typical readers, chose not to. However, the talented reader responses were consistently richer and more detailed through the employment of textual evidence in their answers, compared with their typical peers. Therefore, the talented readers demonstrated more effective working memory successfully recalling textual nuances and evidence from memory in their answers. This observation supports recent neuro-imaging evidence that has identified ‘high-level frontal cortical functioning within a bilateral frontal-parietal network’ (Geake, 2009, p. 81) that enables enhanced working memory in gifted and talented individuals.

All of the talented readers relied on domain or literacy-specific knowledge to successfully respond to the unfamiliar structural design and requirements of the critical literacy questions. These literacy-specific strategies included using textual evidence to answer questions, such as quotes and images; employing the question in the response; and using literacy metalanguage words and phrases like *character, author, author's opinion, point of view, retelling, verse, paragraph, story, tale, fantasy, and parody* that were not offered in the texts or questions. Many of the talented readers were observed systematically breaking questions down into smaller parts and employing problem solving strategies in their attempt to answer unfamiliar questions. One significant example was Isla's response to the picture book question 2. Using the text for support, Isla employed deductive reasoning and a number of clear steps in her answer, to enable her to draw conclusions about the context of the story as required by the question. Her answer reflects subjective and evaluative language as she compares and contrasts the two main character groups. The ability of the talented readers to analyse and synthesise textual evidence within their own experiences and real world understandings, was a significant difference noted when compared with the typical readers, who showed very limited ability to engage in these higher order executive cognitive processes.

Another difference between talented and typical reader identified in this study was the extended language used to answer questions. In general, most of the talented readers' responses exhibited verbally rich responses reflected through higher average word counts, when compared with their typical peers. It was found that the more words employed by a participant in their responses, the more likely of a successful outcome in answering the critical literacy question. Highly verbose responses drew connections between the text and their own worldviews and understandings. This self-reflective behaviour is a necessary component of critical literacy and enabled deeper engagement in the question and consequently a richer response. Longer answers allowed for the observation of more metacognitive behaviours, such as connections with cognitive control systems, working memory, abstraction and reasoning. No typical readers

engaged in extended responses in this study. There were also many examples of advanced and descriptive expression across most of the talented readers' answers, which was not evident in any of the typical reader responses. The data on language use collected by this present study support Reis et al.'s (2004) claim that talented readers display 'high verbal ability in self expression' (Reis, 2008, p. 657).

9.6 Emerging Themes

A number of key themes have emerged from the results and discussion, which will now be expanded upon. They include defining and identifying talented readers, talented readers versus giftedness debate, and measuring metacognition.

9.6.1 Defining Talented Readers

As stated, only limited research has been conducted into the identification and learning needs of talented readers, and, as Reis et al.'s (2004) review of the literature on talented readers notes, much of what has been written on this topic is based on anecdotal evidence. From the reviewed 'extant, primarily anecdotal literature' (2008, p. 657), Reis summarises four characteristics of talented readers. These include 'reading early and at advanced levels, using advance processing in reading, reading with enthusiasm and enjoyment, and demonstrating advanced language skills (oral, reading, and written)' (2008, p. 657). Evidence collected in this present study supports two of these four characteristics as being common amongst talented readers.

Reading at advanced levels was evident in all the case studied *talented readers* who scored in the top 10% of the PAT-R standardised reading test. In this same test the three *possibly talented readers* scored in the top 20%. However, two of these three scored in the top 10% in the school-administered TORCH standardised reading test earlier in the year, and the third student was absent during that testing and therefore it is not possible to draw confident conclusions about his results. Therefore, this evidence supports the claim that talented readers read at 'advanced levels' (Caton & Wingenbach, 1986; Dooley, 1993; Halsted, 1994; Reis, 2008; VanTassel-Baska,

1996; Wood, 2008). The second characteristic supported by this study is that of advanced language skills. All of the *talented* and *possibly talented readers* produced extensive examples of advanced language and phrasing. Some of these responses were collated in Table 8.34.

9.6.1.1 Talented readers versus giftedness debate

The early claims by Durkin (1990) and Jackson (1988, 1992, 1998), which continue to be quoted by Reis (2004, 2008), that ‘not all academically gifted students read at high levels, and not all talented readers will be identified as academically gifted because of the variation of abilities in this population’ (cited in Reis, 2008, p. 656) may be considered simplistic and erroneous according the limited results gained in this present study. The process of learning to read has been shown to be a complex cognitive activity, requiring ‘profound alterations in brain circuitry’ (Dehaene, 2009, p. 3). In addition, the brain plasticity required for reading must also simultaneously integrate cultural understandings that influence meaning making, which in turn enable the reader to break the code of the text as well as participate, use and analyse what is being read (Freebody & Luke, 1990). If a very young child can master this complex process, which takes many years to develop in most people (and never in some), that child possesses natural abilities that are beyond the general population. Situated within Gagné’s DMGT 2.0 model, it is hypothesised these children must exhibit superior natural ability in mental domains as evidenced by their outstanding reading performance when compared with their age peers. Therefore, young talented readers may possess the outstanding natural abilities that should identify them as being gifted.

In addition to young talented readers falling neatly within Gagné’s (2008) definition of giftedness and talent, the data collected from this present study can also be compared with Sternberg’s (1981) componential theory of intellectual giftedness. All of the *talented* and *possibly talented readers* were observed employing Sternberg’s metacomponents as they answered the critical literacy questions. These participants recognised the nature and demands of the task, understood and employed the necessary steps required to perform the task, and selected

appropriate and effective strategies that enabled completion of the tasks. These talented readers used their limited resources to complete the demands of the tasks and consistently monitored their progress employing fix-up strategies as necessary (Sternberg, 1981). While the *typical readers* also used some of these metacomponents to enable the successful completion of the tasks, it was at a less consistent level, and may be age related i.e. the employment of Sternberg's metacomponents was more evident in the two older *typical readers*. When Leila, the Year 4 *typical reader*'s personal resources were limited or proved inadequate to answer the questions, she was not as vigilant in pursuing answers and consequently less likely to complete the task. On the other hand, Connor, the Year 6 *typical reader*, did answer all of the tasks; however, the quality of his responses lacked the depth evident in the answers given by his talented peers.

Therefore, if the evidence presented in this current study is scaffolded against the definitions of intellectual giftedness by Gagné's DMGT 2.0 model and Sternberg's componential theory, talented readers should be considered gifted students, and claims to the contrary are questionable.

9.6.1.2 Identification of talented readers.

Employing Gagné's DMGT 2.0 to identify talented readers, data from this study suggest the quantitative 10% performance benchmark may be problematic. For example, the *possible talented readers* scored below the 10% benchmark in the PAT-R standardised reading test; however they scored in the top 10% previously in other standardised reading tests. Reis' (2008) acceptance of Dole and Adam's (1983) definition of talented readers as 'reading approximately two or more years above grade level as measured by a standardised reading test' (Reis, 2008, p. 656) could unintentionally exclude potentially high ability readers. Gagné (2008) himself advises on a more flexible approach to identification and benchmarking:

The 'how many' question has no absolute answer; nowhere will we find a magical number that automatically separates those labelled gifted or talented from the rest of the

population. The choice of an appropriate threshold requires that professionals come to a consensus. (p. 5)

Single quantifiable benchmarks such as standardised tests should be used with caution when identifying talented readers. The variance between different standardised tests addressed in the current study was shown to be problematic. Results from the Waddington, TORCH and PAT-R reading tests did not always produce consistent results across some participants. Variances such as emotional and physical health on the days of testing may explain some discrepancies; however, these remain assumptions as this aspect was beyond the scope of this study.

Gagné's DMGT 2.0 presents a model that might provide the necessary practical support for classroom teachers not just in the identification of young talented readers, but also of the provisions required by young talented readers. Figure 9.1 presents a modified version of the DMGT 2.0 as a scaffold for identifying talented readers by integrating the findings of this study and some characteristics summarised by Reis (2008).

Of the original six sub-components of the DMGT 2.0's natural abilities (G), three of the four mental sub-components suit the types of abilities that enable talented reading performance, i.e. intellectual (GI), creative (GS) and perceptual (GP) abilities. In the Intellectual Domain (GI), general intelligence, fluid and crystallised reasoning, verbal and spatial ability, and memory, including procedural and declarative knowledge, were all demonstrated by the talented readers in this study. Conditional knowledge has been added to this section based on the part it played in the metacognitive behaviours of the talented readers in this study. The Creative Domain (GC) enables problem-solving strategies, imagination to visualise what is read and the ability to access long-term memory, which would be needed for making connections with previous knowledge and personal experiences necessary for connotative connections. Finally, early reading would require Perceptual abilities (GP) that include good vision to see letters and words and good hearing to distinguish sounds and to listen to stories being read, but not to an 'outstanding' level.

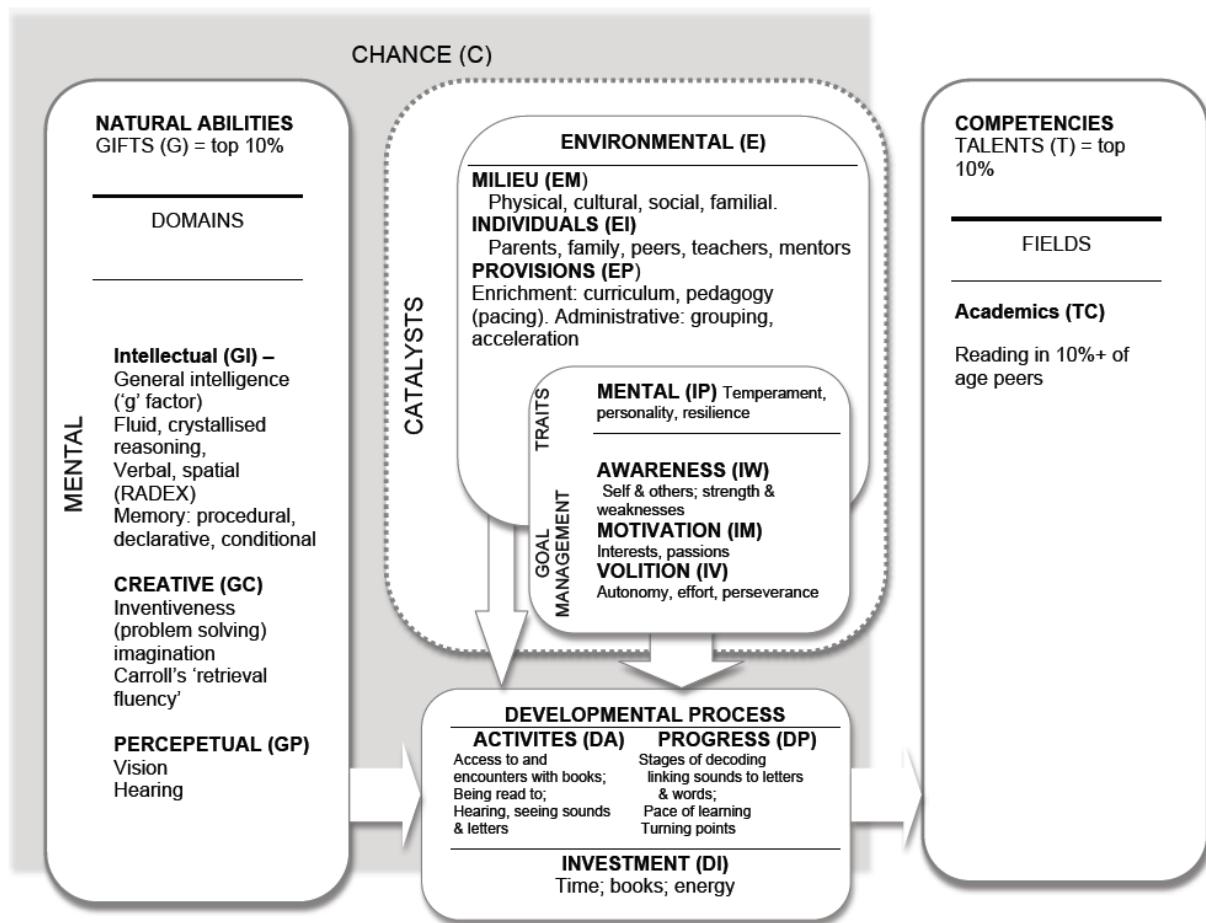


Figure 9.1. Modified Gagné's DMGT (2008) defining Talented Readers

Focusing on the Catalysts of the DMGT, this study found evidence to support Environmental factors, such as a Milieu (EM) that offers positive familial attitudes towards reading, were a reoccurring theme across the parent questionnaires. The extent to which Individuals (EI) and Provisions (EP) impact on young readers was not part of the data collected for this study. However, the Traits and Goal Management components were substantial. For example, the personality trait that is positively inclined towards wanting to read, and the resilience to persist in the problem solving aspect of learning to decode are what enables learning to be situate in the Mental (IP) sub-catalyst. However, the temperament trait involving 'hereditary predispositions' was not determinable in this study.

One of the strongest findings in this study links with the DMGT 2.0 goal-management dimension and the three sub-components: awareness (IW), motivation (IM) and volition (IV). Talented readers regularly demonstrated stronger awareness of task goals and the self regulated

motivation and volition to complete the requirements of the tasks, compared with typical readers, particularly amongst the younger participants of the study. Difference between the talented and typical older readers in these categories was not as strong, but still evident.

The Talent Development process of the model (D) could not be ascertained with the data collected in this study. However, if, as Dehaene (2009) says, the brain is ‘not designed for reading’ (p. 8), without access to books or texts and modelled reading practices by efficient readers, there is little likelihood of the development of the ability to read. While some children learn to read before school with little systematic learning input, others begin mastery of the reading process once exposed to school-based systematic teaching. Again, little is known about how this progression manifests itself as high performance reading in the very young. It is possible that the DMGT 2.0 could provide the necessary organisational framework for developing our understandings of young talented readers and developing appropriate teaching and learning experiences.

Catron and Wingenbach (1986) stated that *some* talented students are able to utilise skills like analysis, synthesis and evaluation as well integrating prior knowledge and experience into their reading (as cited in Reis, 2008, p. 657). All of the talented readers in this study were observed utilising these skills in many of their responses. The challenging nature of critical literacy gave these talented readers the opportunity to employ these skills. Without such challenges, it is possible these skills might otherwise not be employed and practised by young readers.

9.6.2 Measuring Metacognition

Passive probes, such as self-reporting surveys and inventories, are insufficient and inadequate for young students regardless of their advanced or typical academic abilities. This is because they not only require self-knowledge transference, but also a high level of linguistic competency to decipher the intent of the survey questions that have been designed for adults. This study found that, while young talented and typical readers employ metacognition, they do

not necessarily have the knowledge to verbalise these strategies. With age and experience self-reporting skills improve (Weinert & Schneider, 1999; Whitebread et al., 2009). The current study supports the findings of Whitebread et al. ‘that the increased use of observational methods has the potential to make a clear contribution, particularly with young children’ (p. 65) in identifying metacognition and self-regulation, as opposed to self-reporting tools.

The present study found older students were more likely to give accurate accounts of their reading practices using inventories; however, there were examples of some older participants underestimating their practices or misinterpreting the meaning of questions asked. It was also found that observational tools are less effective with children if the task is too easy, or if reading efficiency has developed to such a level that many metacognitive strategies are automatic (Samuels et al., 2005) and therefore difficult to observe.

9.7 Conclusion

This chapter provided a discussion of the findings of the current study in relation to the research questions. The chapter explored how critical literacy requires metacognitive strategies for the successful analysis, understanding and critiquing of texts; it demonstrated how talented readers are more adept at employing metacognition than their typical peers during critical literacy discourse by identifying the specific metacognitive strategies used by *talented readers*, and also addressed the issue of high performing readers who may not score in the top 10% of their age peers in standardised reading tests. Several themes emerged from the data and the ensuing discussion including defining, identifying and situating talented readers within gifted education. Using the findings of this present study a modified version of Gagné’s DMGT 2.0 was offered to assist educators in identifying and understanding the developmental learning needs of young talented readers. Finally, using the data collected in this present study, the chapter addressed issues concerning the inadequacy of current popular self-reporting inventories and surveys in measuring metacognition in young children.

CHAPTER TEN: CONCLUSION

If the word doesn't exist, invent it: but first be sure it doesn't exist.

Charles Baudelaire 1821-1867

10.1 Introduction

This qualitative study focused on talented and typical readers and collected rich and appropriate data that enabled distinct findings to be made. The following presents a summary of the study, an overview of the methodology, the major findings of the present study, limitations of the study, some implications for practice and considerations for future research.

10.2 Summary of the Present Study

This study investigated whether critical literacy requires the employment of metacognitive strategies for successful analysis, understanding and critiquing of texts, and whether young talented readers are more adept at employing metacognition than their same-age typical reader peers during critical literacy discourse. The present study also sought to add empirical evidence to our understanding about young talented readers, in a field largely driven by anecdotal evidence (Reis, 2008). In doing this, the present study was able to validate the inclusion of talented readers in gifted education and present a modified version of Gagné's DMGT 2.0 (2008) that offers clearer identification and developmental understandings of the teaching and learning needs of young talented readers.

10.3 Methodology

As the relationship between metacognition and critical literacy had not previously been investigated, it was necessary to take a qualitative approach adapting and modifying tools from various fields of study. In addition, these tools needed to be modified taking into careful

consideration their appropriateness for data collection with young children aged 7 to 12 years of age.

10.3.1 The Research Process

Step 1	Pilot study
Step 2	Primary study Selection of participants with school principals Participant and parent information distributed Return of permissions Pre-study assessment of participants
Step 3	Filmed sessions (3 weeks) Post-study assessment of participants

Individual profiles were created from pre- and post-study assessment data. Tools used included:

- School-based standardised reading assessment scores (Waddington Diagnostic Standard Reading Test and TORCH: Tests of Reading Comprehension: ACER).
- ACER Progressive Achievement Tests in Reading Fourth Edition (PAT-R) given to participants by the researcher to standardise reading ability data.
- Elementary Reading Attitudinal Survey (ERAS)
- Metacognitive Awareness of Reading Strategies Inventory (MRSI)
- Metacomprehension Strategy Index (MSI)
- Parent questionnaire on reading history of each participant

The primary Study collected data from three separate filmed sessions as participants read and answered a number of critical literacy questions for three different texts including a poem, a picture book and a short story. All responses were then transcribed for discourse analysis.

Analysing critical literacy competency and metacognitive behaviours for each participant required evaluating the data for these two components separately, and then comparing the results to determine possible patterns and relationships within and between the data.

This process required the development of a framework within which data analysis could be undertaken. Titled the Discourse Analysis Frame (DAF), it was designed to identify

metacognitive behaviours in very young children, and in part was based on Whitebread et al.'s (2007) Cambridgeshire Independent Learning in the Foundation Stage (C.Ind.Le) coding scheme for older children. The DAF also adapted and integrated appropriate metacognitive assertions from Tarricone's (2011) Conceptual Framework and Taxonomy of Metacognition. Finally, the critical literacy component of the DAF integrated McDaniel's (2006) Critical Literacy Question Framework, which was also used in the question design for the tasks for this present study.

10.4 Major Findings

The following findings were made during the course of the current study:

- **Metacognitive competency is an enabler of critical literacy discourse.** To evaluate a text's social functions, technical characteristics and contexts, such as is required by critical literacy, the reader must draw on their self-knowledge and domain-specific knowledge. The reader must reflect on their personal understandings and knowledge of the world, while maintaining task sensitivity and goals to enable successful interaction with critical literacy questions. Knowledge and regulation of one's cognition not only enables, but also is essential for successful critical literacy discourse. Therefore, critical literacy does require the employment of metacognitive strategies for successful analysis, understanding and critiquing of texts.
- **Metacognition is not 'a late developing skill' and can be observed in both young talented and typical readers.** All of the participants in this study were observed engaging metacognitive strategies, to different and varying degrees, in their responses to the critical literacy questions asked. Metacognition was evident in enabling both general reading comprehension as well as successful interaction with the critical literacy questions. In this present study metacognitive behaviour including Knowledge of Cognition (declarative, procedural and conditional

knowledge), Regulation of Cognition and self-reflection were more prevalent in talented readers than their typical peers and will be discussed in the following point.

- **Talented readers are more adept at employing metacognition than their typical age peers, when engaging in critical literacy discourse.** While all participants in this present study demonstrated varying degrees of metacognitive behaviours during the critical literacy tasks undertaken, it was the talented readers who were observed consistently drawing on a wider set of metacognitive strategies with more frequency and in greater depth compared with their typical peers. From as young as seven years of age, the talented readers in this study demonstrated regulatory strategies and metacognitive behaviours that enabled the necessary problem solving skills to adapt and transfer knowledge to the unfamiliar context of the critical literacy questions for this present study.
- **Talented readers employ knowledge of and regulation of cognition in their responses to critical literacy questions more than their typical reader peers.** There was substantially more evidence of declarative, procedural and conditional knowledge in the responses given by the talented readers compared with the typical readers. Regulatory knowledge was clearly superior in the talented readers compared with the typical readers as they planned, monitored and controlled their responses during the answering process.
- **Talented readers have more complex and advanced domain-specific knowledge than their typical reader peers.** In this present study talented readers selected and used appropriate task-specific strategies and metalanguage more frequently than their typical reader peers across the tasks. These domain-specific (literacy) strategies included using textual evidence to answer questions, such as quotes and images; employing the question in the response; and using literacy metalanguage words and phrases like *character, author, author's opinion, point of view, retelling,*

verse, paragraph, story, tale, fantasy, and parody that were not offered in the texts or questions.

- **Multiple assessment strategies and flexibility in benchmarking need to be used to correctly identify talented readers.** Relying only on a single standardised reading test in determining whether a child is a talented reader or not is an inadequate form of identification. In this present study incongruence in standardised reading results highlighted the need for multiple assessment tools when identifying ability. Gagné suggests his recommended 10% talent performance threshold can be problematic and should not be considered ‘a magical number’ and that ‘an appropriate threshold requires that professionals come to a consensus’ (2008, p. 5). In this present study all of the *talented* and *possibly talented readers* case studied achieved results in the top 10% in at least one standardised test but not necessarily both standardised tests included in the data analysis. Therefore, single quantifiable benchmarks, such as standardised tests, should be used with caution when identifying talented readers. Variances, such as emotional and physical health on the days of testing, may explain some discrepancies. Other shared characteristics observed during this present study might offer valuable additional information if performance in standardised reading tests is inconclusive. These include advanced oral and reading skills compared with typical peers, such as verbal confidence and advanced vocabulary usage. Other indicators would be advanced skills and reading processes, such as high working memory recalling textual nuances and evidence, drawing connections between texts and self and world knowledge and understandings, and an ability to transfer skills to new and unique learning experiences.
- **Talented readers are gifted individuals.** The process of learning to read has been shown to be a complex cognitive activity, requiring ‘profound alterations in brain

circuitry' (Dehaene, 2009, p. 3). In addition, the brain plasticity required for reading must also simultaneously integrate cultural understandings that influence meaning making, which in turn enables the reader to break the code of the text as well as participate, use and analyse what is being read (Freebody & Luke, 1990). If a very young child can master a complex process, that takes many years to develop in most people (and never in some), that child possesses outstanding natural abilities that are beyond the general population (Gagné, 2004, 2008). When placed in new and unique situations, talented readers, exhibit behaviours, common in intellectual giftedness. These include recognising the nature and demands of a task, understanding and employing the necessary steps required to perform the task, and selecting appropriate and effective strategies that enabled completion of the task. They use their limited resources to complete the demands of the tasks and consistently monitor their progress employing fix-up strategies as necessary (Chan, 1999).

10.5 Limitations of this Study

Five limitations were noted throughout the research process of this study. They included the sample size, narrow diversity of the participants, using only a qualitative research method, and the reliability and validity of the instruments utilised.

A limitation of this study was the small sample used. A larger sample size would have provided more opportunities to collect data across Stage groups, and provide more typical readers to be used in the comparison process. The sites of the study included two schools situated in similar socio-economic areas. This meant the diversity of the participants' socio-cultural backgrounds was narrow. Future research should also draw on culturally diverse populations that may offer expanded understandings of cross-cultural critical literacy practices.

The qualitative nature of this study may have been enriched with further quantitative methods allowing for additional statistical data, such as the frequency of metacognitive strategies

across the samples as well as measuring the intensity of behaviours observed. The small sample size of this study prohibited these quantitative options.

This study developed a discourse analysis framework based on the Whitebread et al. (2007) C.Ind.Le Coding Scheme, designed for pre-school children. While significant work has been published on the employment of this tool, the authors (Whitebread et al., 2007) note that it is still in the process of being validated. While this study adopted the metacognitive and self-regulation categories of the C.Ind.Le Coding Scheme, it was necessary to alter the descriptor indicators to suit the tasks employed by this study, i.e. reading and discussing texts. Mirroring the original study, issues of validity and reliability were undertaken in two ways. Through filming all sessions, every response can be revisited to validate transcriptions and behaviours noted. Reliability in the coding process, that is linking responses and behaviours with metacognitive categories, again mirrored the original study through a co-coding process by the researcher and a double degree Masters graduate in education and psychology. While extensive effort in maintaining objectivity was made through initial independent analysis and follow up comparative discussions, it is acknowledged that a measure of inter-coder reliability was not formalised.

A major component of this study was to identify specific metacognitive behaviours engaged in during critical literacy activities. This was undertaken adapting Tarricone's (2011) metacognitive assertions from her Taxonomy model. Such adaptation runs the risk of compromising the integrity of the original intent of each assertion. While this issue was continuously addressed throughout the analysis phase in consultation with the co-coder of this study, it is possible that findings may be disputed at this level.

One advantage in identifying these limitations is the possibility of future research that could overcome these difficulties. See section 10.7.

10.6 Implications of the Major Findings for Practice

“Would you tell me, please, which way I ought to go from here?”

“That depends a good deal on where you want to get to,” said the Cat.

Lewis Carroll – *Alice’s Adventures in Wonderland*

Seven major findings have been identified in this present study and offer evidence to support several current movements within the field of metacognition, gifted and talented education and reading pedagogy. The implications of these findings for educational practice follow.

The supposition by Griffith and Ruan (2005) that there might be a ‘connection between metacognition and critical literacy [as] the two are closely related to each other’ (p. 11) has been supported by the findings in this study. The findings also suggest that the relationship between these two constructs is beyond a simple connection; instead, a fundamental affiliation exists in that metacognitive processes not only enable but are essential for critical literacy discourse. Consequently, the inclusion of critical literacy within literacy education is one effective avenue for teaching and practising metacognition at all stages of the English syllabus.

The findings of the current study support the growing evidence that metacognition and self-regulation are not late developing skills as previously believed (Baker, 2005; Brown, 1985, 1987; Griffith & Ruan, 2005; McCormick, 2003; Paris & Winograd, 1990). While Baker (2005) clarifies this stance in her statement ‘metacognition develops gradually throughout childhood into adulthood’ (p. 63), she also asserts that older students are more likely to monitor their understanding than younger students because of their developmental differences and self-systems. This study identified strong evidence that metacognitive strategies can be seen in the reading behaviours of children as young as seven years old. However, the ability to employ metacognition during reading appears linked to reading proficiency. In other words, young talented readers employ metacognition more efficiently and earlier than their same-age peers.

Reis states that ‘talented readers are placed at risk in many schools’ (2008, p. 664). With advanced self-systems, such as knowledge of cognition, specific and general strategy knowledge

and use, talented readers should be provided with reading programs that build on their advanced cognitive abilities developing skills of in-depth analysis, synthesis and evaluation based on reading ability rather than chronological age. Opportunities for in-depth discussion must be factored into reading programs to encourage, guide and develop verbal precocity and metacognitive processing. These reading programs should also incorporate regular critical literacy activities for young talented readers to have the opportunity to practise and develop these aforementioned skills.

If the level of metacognition is a defining element that separates young talented and typical readers, as suggested by this study, the teaching of metacognitive skills should be an integral component of all reading programs for all students. Critical literacy would provide the instrument for this to be realised due to the affiliated relationship between this literacy form and metacognition.

Unitary benchmarks and definitions gained through the administration of a single standardised test, should be avoided in identifying young talented readers. While standardised reading tests are an effective instrument for determining reading ability, additional abilities need to be considered in determining potential for outstanding reading performance. These abilities should include, but not be limited to, advanced verbal capacity, high working memory, motivation and volition towards all reading genres.

10.7 Considerations for Future Research

Based on some of the findings of the current study, some considerations for future research are offered in this section.

With declining results at the upper end in PISA reading tests, further investigation is required to determine if this is because of disengagement issues in students, skill plateauing or regression, or other issues. Can the decline be linked to a lack of challenge at the primary or elementary school level, or identifiable issues that emerge during the secondary years?

Longitudinal studies following young talented readers as they progress through school could shed important light on this issue.

Further research into the progression from dependent to independent reading practices that compare talented and typical readers would be valuable to better understanding the needs of these students. The difficulty lies in identifying potentiality of reading talent; however, a longitudinal study involving a large cohort should garner a sound cross-section of abilities.

Most research into the classroom practices of teachers with regards to program and teaching provisions for able readers has been conducted in the USA (Archambault et al., 1993; Taylor & Fry, 1988; Westberg et al., 1993; Reis et al., 2004 as cited in Reis 2008). While a few similar studies have been undertaken in Australia (e.g. Smith, 2006), there is still room for more studies across Australia, which would give valuable insight into the local context that at this stage remains mostly anecdotal in nature.

While this study highlighted the ability of both talented and typical readers to respond to critical literacy questions, further research into how students from other cultural backgrounds react and respond to the same questions might highlight a need for redesigning question structures to accommodate and encourage these students and encourage their cultural capital.

From the limited empirical research that has so far been conducted with talented readers (Reis et al., 2004, 2008; Smith, 2006), there is still much more research required to learn about the characteristics, learning and teaching needs of talented readers of all ages. Only in this way can we discover how and why skill plateauing and disconnection with literacy learning in their later years occurs. This present study has demonstrated how rich challenges, such as those presented through critical literacy questions and tasks, can elicit higher order processing and complex responses from young talented readers. Rather than allowing these readers to stagnate at their comfort levels because of the perceived focus on struggling readers, could providing ongoing reading challenges and explicit advanced skill teaching throughout the primary years,

that match the ability level of talented readers, be the answer? Only further research will provide these answers.

10.8 Conclusion

Our species alone rises above its biological condition, creates an artificial cultural environment for itself, and teaches itself new skills like reading.

Dehaene, 2009, p. 3

The act of learning to read involves ‘profound alterations in brain circuitry’ (Dehaene, 2009, p. 3) to adapt and enable the limited ability of the retina and the brain to complete a complex task for which they were not designed. Neuroscience has shown that while the brain is hardwired for meaning making and problem solving, it is ill-equipped, in its natural state, for the act of reading. Learning to read, as Dehaene suggests involves recycling and retraining ‘some of our old primate brain circuits’ to enable a skill necessary for survival in today’s world (p. 7). Yet, reading and literacy in general has long been acknowledged as a conduit for cognitive ability (Perkins & Salomon, 1988), and as a support for the important development of executive control, skills and strategies that enables self-awareness, self-regulation and other higher order cognitive functions. It is logical that this complex process takes many years to master and this is why it needs to be such an integral component of the education process of every child. And yet for some, this process is not so protracted, and learning to read and developing knowledge and understandings of reflection, self-regulation and monitoring occur years before what might be normally expected.

For a child who has mastered this difficult process at a young age, surely the future is bright? Yet the research and growing evidence strongly suggest otherwise. Reis’ (2008) research found that talented readers, without continued instruction and challenges, may experience plateauing, a decline in achievement trajectory and possible regression of reading skills as ‘some talented readers never learn to exert effort in reading and consequently, acquire poor work habits’ (2008, p. 664). Indeed, there is mounting evidence (for example, the results from the last three

international PISA tests) that, as a country, the skills of Australia's top teenage readers have been in gradual decline. This, in turn, would appear to have long-term implications for this population of talented students. What Reis et al. uncovered in their 2004 study, along with how little is actually known about young talented readers in general, was that when teachers hold the belief that talented readers do not need continued instructional focus, they do not provide the necessary differentiated reading program that challenges and extends these readers. An Australian study also found similar results (Smith, 2006). Hence, there are negative long-term consequences for these children if their individual learning needs are not addressed (Reis, 2008, p. 664).

The present study has added to the limited research base that currently exists for talented readers. It has identified several key elements that separate talented readers from their typical peers and has highlighted the significant differences that exist in how individual readers engage in metacognition. It has also confirmed the long-held belief that metacognition is necessary for successful engagement in critical literacy. There is still much to be discovered about these connections and how young talented readers employ metacognitive control in other areas of their learning.

This study has also shown how critical literacy can offer a pedagogical approach that provides the necessary reading challenges and practice, simultaneously developing metacognitive regulation and understanding in readers. The open-endedness of critical literacy means that this approach offers outstanding possibilities for classroom teachers in the development of essential critical skills and strategies necessary for children and adults to function wisely and productively in the world.

The final word is left to a pioneer of metacognition who ended one of his first papers with a prophetic statement that this research has, to some small extent explored:

Perhaps it is stretching the meaning of metacognition and cognitive monitoring too far to include the critical appraisal of message source, quality of appeal and probable consequences needed to cope with these inputs sensibly, but I do not think so. It is at least

conceivable that the ideas currently brewing in this area could someday be parlayed into a method of teaching children (and adults) to make wise and thoughtful life decisions as well as to comprehend and learn better in formal educational settings (p. 910).

John H. Flavell October 1979

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